ORDER NO. GAD8610616C8

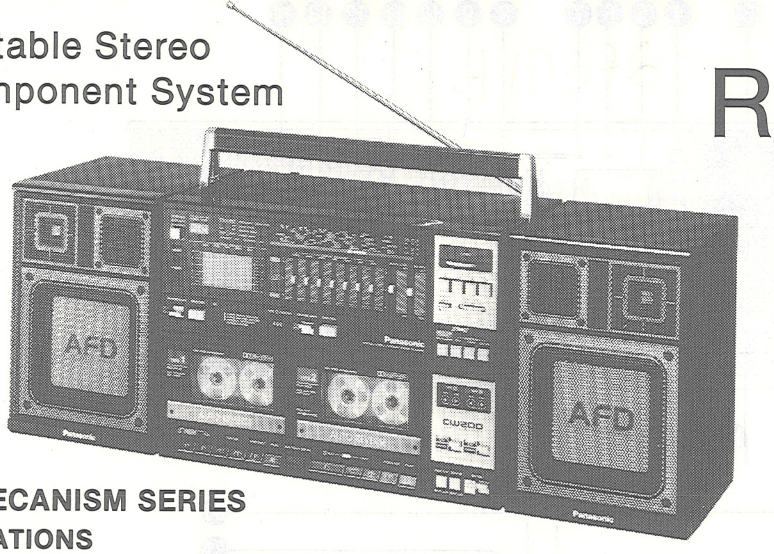
Service Manual

Radio Cassette

RX-CW200L

(Black)

Portable Stereo
Component System



This is the Service Manual for the following areas.

- Z … For all European areas except United Kingdom, F.R Germany, France, Italy and Finland.
- E … For United Kingdom.
- F … For France.
- I … For Itary and Finland.
- G … For F.R. Germany.
- XC … For Saudi Arabia.

RX-C66F MECANISM SERIES

■ SPECIFICATIONS

General:

Power Requirement:	AC; Z F I G...220 V, 50 Hz E...240 V, 50 Hz XC...110~127/200~220/230~250 V, 50/60 Hz Battery; 15 V (Ten "D" Size Flashlight Batteries) (Panasonic UM-1 or equivalent) Car Battery; with optional car battery card RP-9550
Power Consumption:	Z E F I G...70 W (AC only) XC...76 W (AC only)
Power Output:	Z E F I G...50 W (25 W × 2) MPO XC...150 W (75 W × 2)...PMPO 36 W (18 W × 2)...RMS (max.)
Speaker:	Woofer; 12 cm × 12 cm AFD Speaker (8Ω) Squawker; 5 cm PM Dynamic Speaker (8Ω) Tweeter; 2 cm Ceramic Speaker (1.4 kΩ)
Input:	MIX. MIC; sensitivity 1.6 mV/applicable microphone impedance 200~600Ω (ϕ3.5) CD/LINE IN; sensitivity 316 mV/47 kΩ over DC IN; 13.2 V
Output:	EXT SP; 8Ω, ϕ3.5 HEADPHONES; 32Ω, ϕ3.5
Dimensions:	Total Size; 660(W) × 300(H) × 193(D) mm Main Unit; 339(W) × 245(H) × 193(D) mm Speaker Box; 165(W) × 244(H) × 175(D) mm
Weight:	8.4 kg without batteries

Radio Section:

Radio Frequency Range:	FM; 87.5~108 MHz LW; Z E F I G 148.5~285 kHz (2020~1052 m) LW; XC 150~285 kHz (2000~1052 m) MW; Z E F I G 520~1610 kHz (577~186 m) MW; XC 530~1610 kHz (566~186 m) SW; 5.9~18 MHz (50.8~16.7 m)
Intermediate Frequency:	FM; 10.7 MHz AM (LW/MW/SW); 455 kHz Z F I G XC (470 kHz E)
Sensitivity:	FM; 1.8μV/50 mW output (−3dB Limit sens) LW; 125μV/m/50 mW output MW; 56μV/m/50 mW output SW; 3.5μV/50 mW output

Tape Deck Section:	**Tape 1**
Frequency Response:	55~15,000 Hz (with normal tape) 55~16,000 Hz (with CrO_2 & Metal tape)
Recording System:	AC bias, AC erase
Tape Speed:	4.8 cm/s
Track System:	4-track 2-channel stereo recording and playback

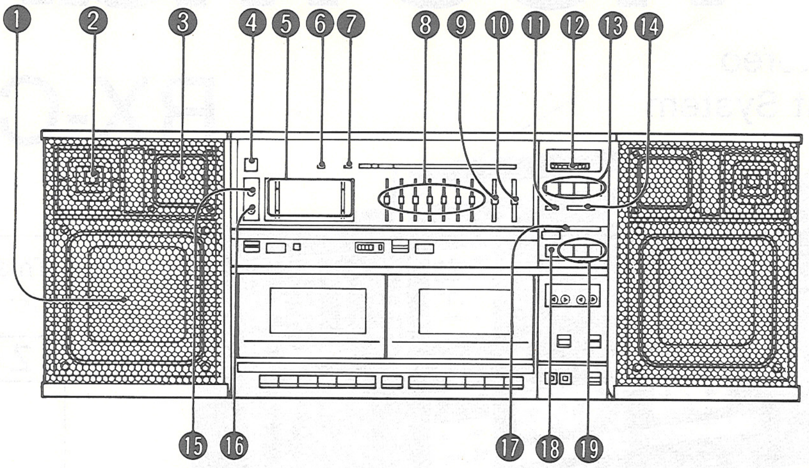
Tape Deck Section:	**Tape 2**
Frequency Response:	55~15,000 Hz (with normal tape) 55~16,000 Hz (with CrO_2 & Metal tape)
Tape Speed:	4.8 cm/s
Track System:	4-track 2-channel stereo playback

Design and specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS AND COMPONENTS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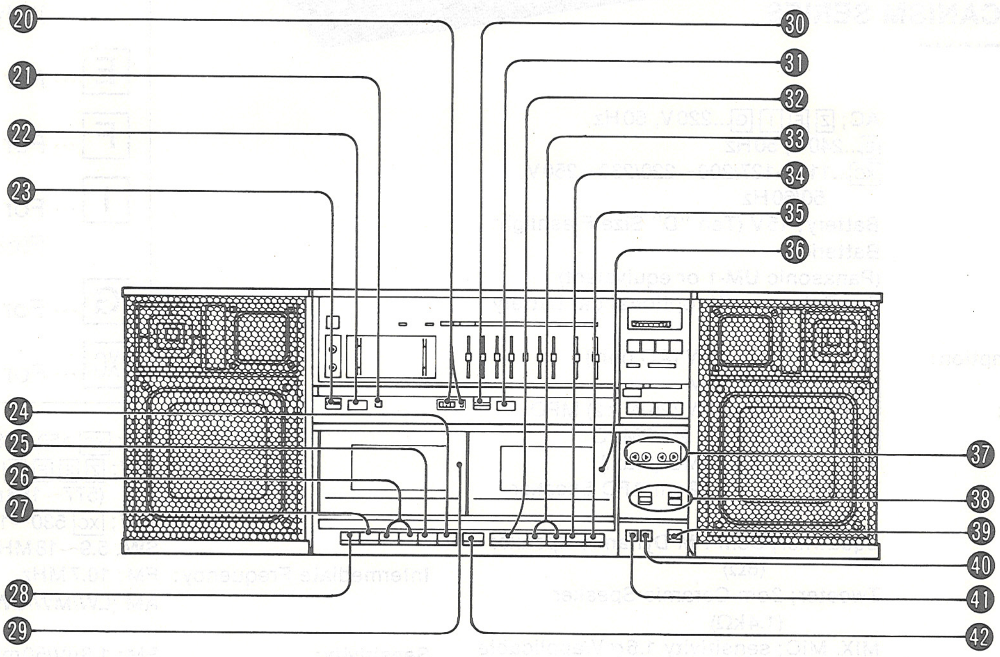
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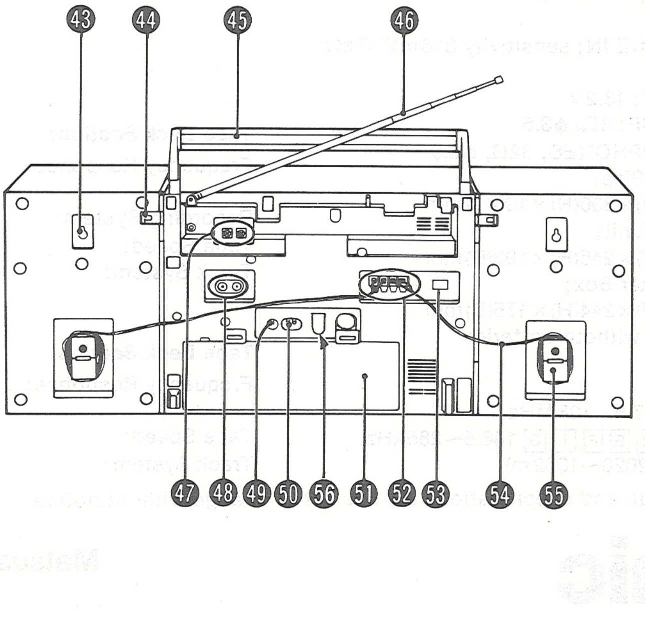
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54
55

❶ Speakers (Woofer) (12cm×12cm, 8Ω)
❷ Speakers (Tweeter) (2cm, 1.4kΩ)
❸ Speakers (Squawker) (5cm, 8Ω)
❹ Operation Switch (OPERATION)
❺ Spectrum Analyzer (SPECTRUM ANALYZER)
❻ Operation/Battery Check Indicator (OPR/BATT)
❼ FM Stereo Indicator (FM STEREO)
❽ Graphic Equalizer/Frequency Distribution Equalizer Controls (GRAPHIC EQUALIZER/F.D.EQ)
❾ Mixing Level Control (MIXING LEVEL)
❿ Balance Control (BALANCE)
⓫ FM Mode Selector (FM MODE)
⓬ Tuning Control (TUNING)
⓭ Band Selector (BAND)
⓮ Fine Tuning Control (FINE TUNING)
⓯ Mixing Microphone Jack (MIX.MIC) (1.6mV/200~600Ω)
⓰ Headphones Jack (PHONES) (32Ω, φ3.5)

When using the headphones (EAH-S10, optional), avoid listening to sound for a long period of time at excessive volume levels, which may injure your ears.

⓱ Volume Control (VOLUME)
⓲ Equalizer Mode Selector (EQUALIZER MODE)
⓳ Function Selector (FUNCTION)

TAPE 1 (For Recording and Playback)

⑳ Tape 1 Counter and Reset Button (TAPE 1 COUNTER)
㉑ Built-in Microphone (MIC)
㉒ Direction Button (DIRECTION)
㉓ Reverse Mode Selector (REVERSE MODE)
㉔ Pause Button (❚❚ PAUSE)
㉕ Stop/Eject Button (■/▲ STOP/EJECT)
㉖ Fast/Cue Buttons (◀◀·▶▶ FAST/CUE)
㉗ Playback Button (▶PLAY)
㉘ Record Button (● RECORD)
㉙ Cassette Compartment

TAPE 2 (For Playback)

㉚ Reverse Mode Selector (REVERSE MODE)
㉛ Direction Button (DIRECTION)
㉜ Playback Button (▶PLAY)
㉝ Fast/TPS Buttons (◀◀·▶▶ FAST TPS)
㉞ Stop/Eject Button (■/▲STOP/EJECT)
㉟ Pause Button (❚❚PAUSE)
㊱ Cassette Compartment

㊲ Direction Indicators (DIRECTION)
㊳ Tape Selectors (TAPE SELECTOR)
㊴ Editing Mode Selector (EDITING)
㊵ Dolby※NR Switch (DOLBY NR)
㊶ Relay Playback Switch (RELAY PLAY)
㊷ One Touch Editing Button (ONE TOUCH EDITING)

㊸ Speaker Wall Mounts
㊹ Speaker Release Levers (RELEASE)
㊺ Detachable Carrying Handle
㊻ Telescopic Antenna
㊼ External Antenna Terminals (FM ANT/SW ANT)
㊽ CD/Line Input Jacks (CD/LINE IN) 316mV/47kΩ
㊾ DC Input Jack [DC IN 13.2V (12–15V)⊖-⊙-⊕]
㊿ AC Socket (AC IN~)
(51) Battery Compartment
(52) Speaker Terminals (SPEAKER IMP 8Ω ONLY)
(53) Beat Proof Switch (BEAT PROOF)
(54) Speaker Cables
(55) Speaker Cable Compartments
(56) Voltage Selector (for Saudi Arabia only.)

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Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

CAUTIONS ON DISASSEMBLY AND ASSEMBLY

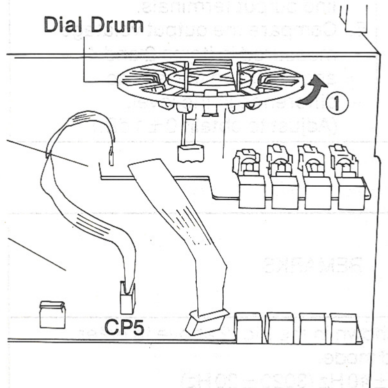

Dial Drum
①
CP5

Fig. 1

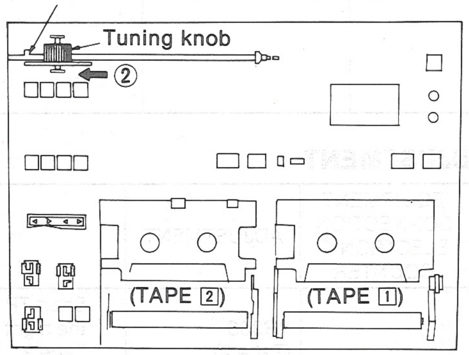

Rack (Dial Pointer) when stopped by boss.
Tuning knob
②
(TAPE 2)
(TAPE 1)

Fig. 2

- Turn the dial drum all the way in the direction of the arrow ①. (Fig. 1)
- Turn the tuning knob in the direction of the arrow ② until the rack (dial pointer) is stopped by the boss. (Fig. 2)

DISASSEMBLY INSTRUCTIONS

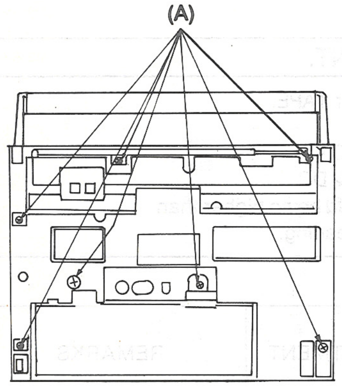


Fig. 1

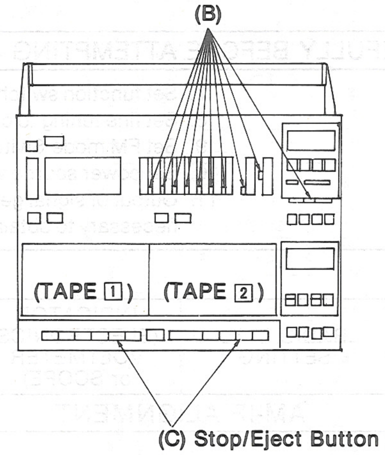

(B)
(TAPE 1)
(TAPE 2)
(C) Stop/Eject Button

Fig. 2

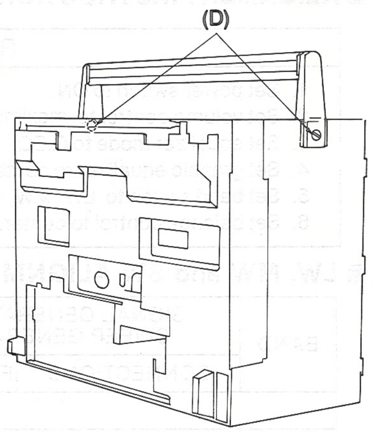


Fig. 3

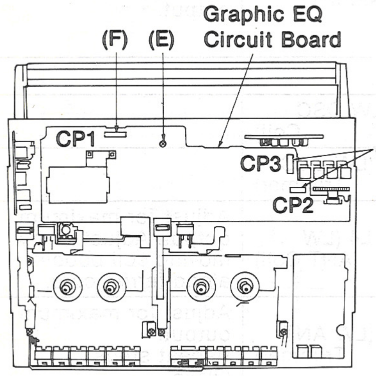

Graphic EQ Circuit Board
(F)
(E)
CP1
CP3
(F)
CP2

Fig. 4

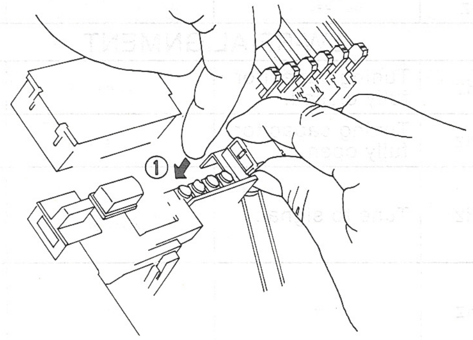


Fig. 5

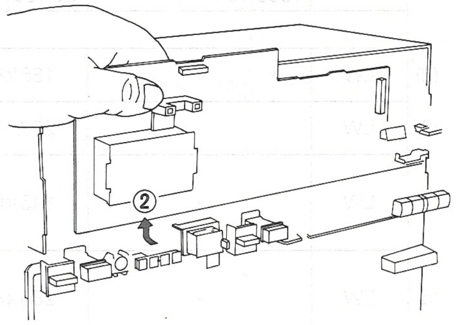


Fig. 6

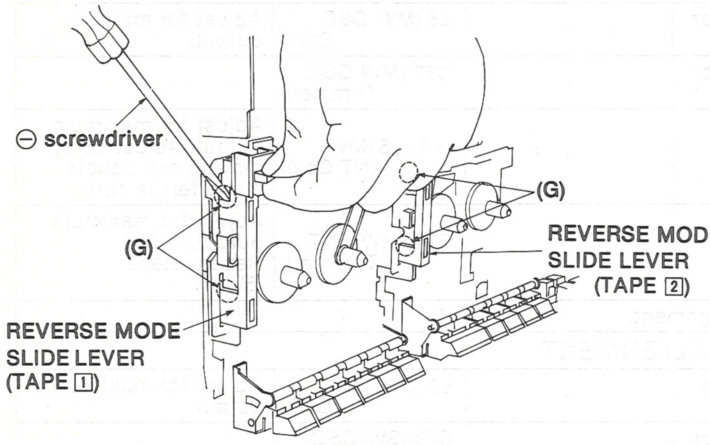

⊖ screwdriver
(G)
(G)
REVERSE MODE SLIDE LEVER (TAPE 2)
REVERSE MODE SLIDE LEVER (TAPE 1)

Fig. 7

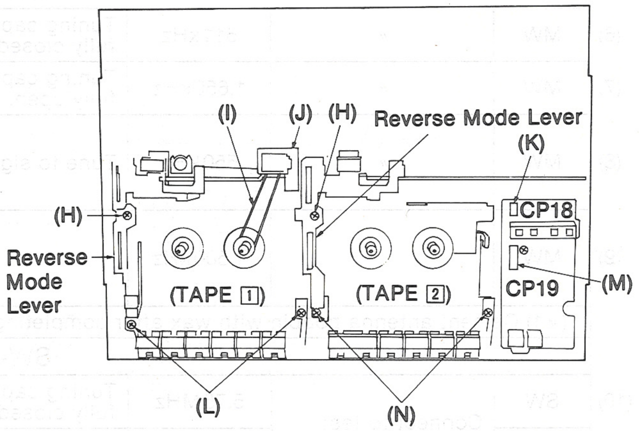

(I)
(J)
(H)
Reverse Mode Lever
(K)
(H)
Reverse Mode Lever
CP18
(TAPE 1)
(TAPE 2)
CP19
(M)
(L)
(N)

Fig. 8

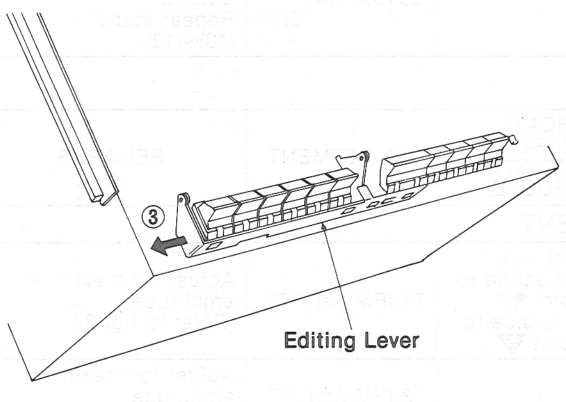

③
Editing Lever

Fig. 9

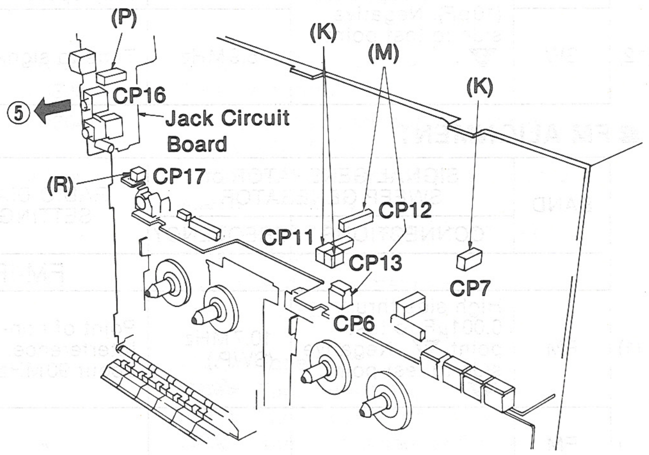

(P)
⑤
CP16
Jack Circuit Board
(R)
CP17
(K)
(M)
(K)
CP12
CP11
CP13
CP7
CP6

Fig. 10

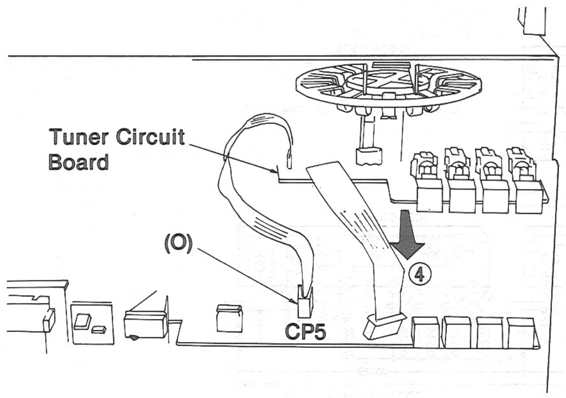

Tuner Circuit Board
(O)
④
CP5

Fig. 11

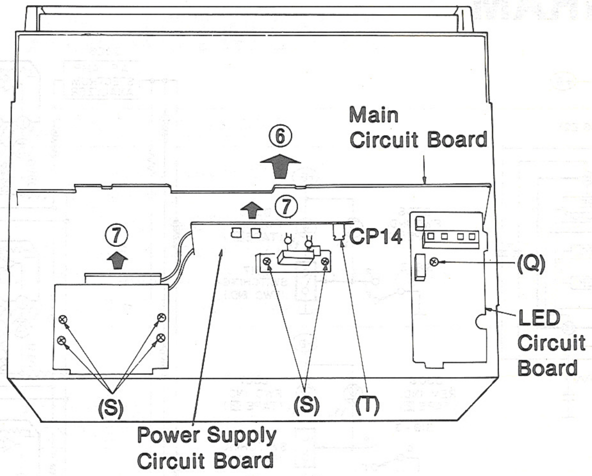

⑥
Main Circuit Board
⑦
⑦
CP14
(Q)
LED Circuit Board
(S)
(S)
(T)
Power Supply Circuit Board

Fig. 12

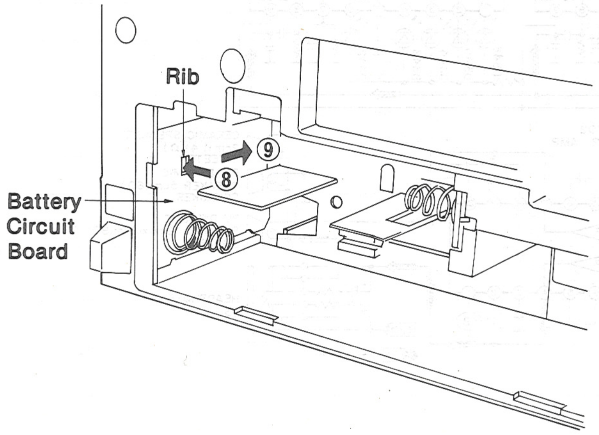

Rib
⑨
⑧
Battery Circuit Board

Fig. 13

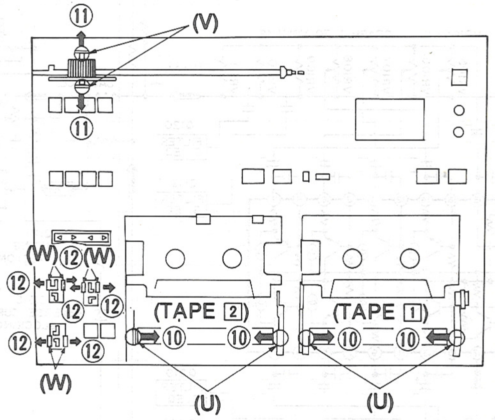

⑪
(V)
⑪
(W) ⑫ (W)
⑫
⑫
⑫
⑫
⑫
(TAPE [2])
(TAPE [1])
⑩
⑩
⑩
⑩
(W)
(U)
(U)

Fig. 14

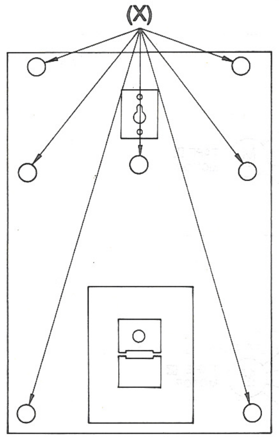


Fig. 15

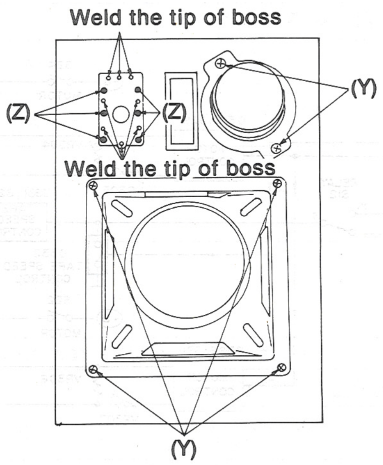

Weld the tip of boss
(Z)
(Z)
(Y)
Weld the tip of boss
(Y)

Fig. 16

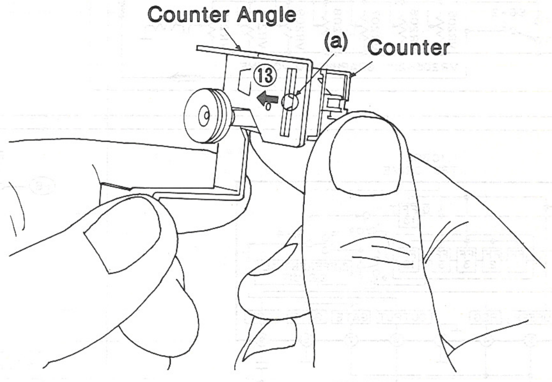

Counter Angle
(a)
Counter
⑬

Fig. 17

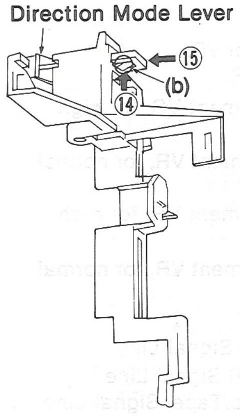

Direction Mode Lever
⑮
(b)
⑭

Fig. 18

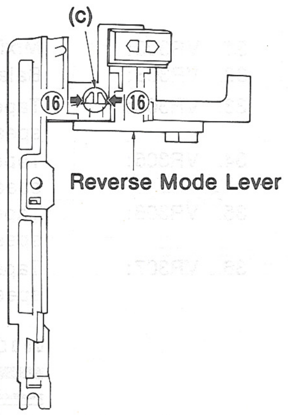

(c)
⑯
⑯
Reverse Mode Lever

Fig. 19

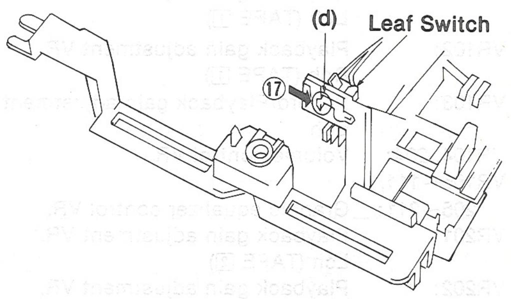

(d)
Leaf Switch
⑰

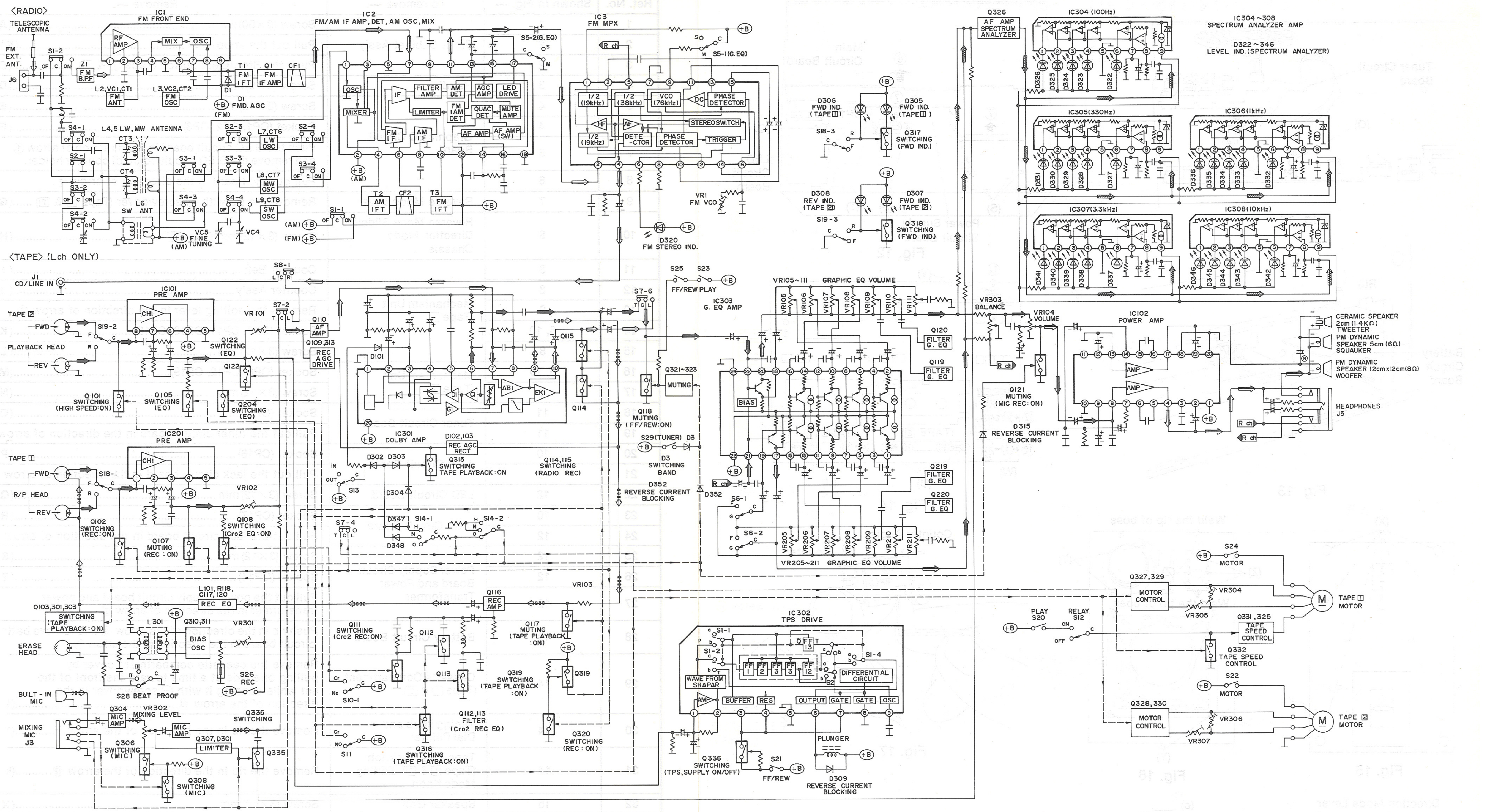
Fig. 20

Be sure to fold at the (▼) mark so that mark is on the outside.

Ref. No.	Shown in Fig. —.	To remove —.	Remove —.
1	1	Front Cabinet Ass'y	Screw (3×50)mm ....(A)×7
2	2		Pull out the knob. (*1) ....(B)×10
3	2		Push the Stop/Eject button (Tape [1] & [2]) ....(C)×2
4	3	Handle	Screw (4×9)mm ....(D)×2
5	4	Graphic EQ Circuit Board	Screw (3×12)mm ....(E)×1
6	4		Socket (CP1, CP2, CP3) ....(F)×3
7	5		Push the G.EQ circuit board in the direction of arrow ① and remove the G.EQ circuit board of counter holder.
8	6		Pull out the board in the direction of arrow ②.
9	7	Reverse Mode Lever	Remove the rib with ⊖ screwdriver (Tape [1] & [2]) ....(G)×4
10	8	Reverse Mode Slidel/ Direction Mode Chassis	Screw (3×12)mm (Tape [1] & [2]) ....(H)×2
11	8	Mechanism Unit (Tape [1])	Counter Belt ....(I)×1
12	8		Counter Ass'y ....(J)×1
13	9		Remove the editing lever in the direction of arrow ③.
14	8, 10		Socket (CP7, CP11, CP13, CP18) ....(K)×4
15	8		Screw (3×12)mm ....(L)×2
16	8, 10	Mechanism Unit (Tape [2])	Socket (CP6, CP12, CP19) ....(M)×3
17	8		Screw (3×12)mm ....(N)×2
18	11	Tuner Circuit Board	Socket (CP5) ....(O)×1
19	11		Pull out the tuner circuit board in the direction of arrow ④.
20	10	Jack Circuit Board	Socket (CP16) ....(P)×1
21	10		Pull out the jack circuit board in the direction of arrow ⑤.
22	12	LED Circuit Board	Screw (3×12)mm ....(Q)×1
23	10	Main Circuit Board	Socket (CP17) ....(R)×1
24	12		Pull out the jack circuit board in the direction of arrow ⑥.
25	12	Power Supply Circuit Board and Power Transformer	Screw (3×12)mm ....(S)×6
26	12		Socket (CP14) ....(T)×1
27	12		Pull out the power supply circuit board and power transformer in the direction of arrow ⑦.
28	13	Battery Circuit Board	Push rib in the direction of the arrow ⑧ and remove battery circuit board in the direction of the arrow ⑨.
29	14	Cassette Compartment (Tape [1] & [2])	Remove the cassette compartment cover by pulling one side at a time toward the front of the set while pushing it with ⊖ screwdriver in the direction of the arrow ⑩. ....(U)×4
30	14	Tuning knob and Dial Pointer	Remove the rib in the direction of the arrow ⑪. ....(V)×2
31	14	Tape Selector knob (Tape [1] & [2]), Editing Mode Knob	Remove the rib in the direction of the arrow ⑫. ....(W)×6
32	15	Speaker Grill	Screw (3×50)mm ....(X)×7
33	16	Woofer Speaker and Squawker Speaker	Screw (3×10)mm ....(Y)×6
34	16	Tweeter Ass'y (*2)	Cut the tip of boss ....(Z)×6
35	17	Counter	Remove the rib in the direction of the arrow ⑬. ....(a)×1
36	18	Direction Mode Lever	Push the rib in the direction of arrow ⑭ and pull out the reverse mode lever in the direction of the arrow ⑮. ....(b)×1
37	19	Reverse Mode Lever	Remove the rib in the direction of the arrow ⑯. ....(c)×1
38	20	Leaf Switch	Remove the rib in the direction of the arrow ⑰. ....(d)×1

(*1) When taking off a knob, wrap it with a cloth to prevent scratches.
(*2) When replacing the tweeter, attach the tweeter to the speaker cabinet by welding it to the remainder of the boss.

BLOCK DIAGRAM



<RADIO>
TELESCOPIC ANTENNA
FM EXT. ANT.
J6
IC1 FM FRONT END
RF AMP
MIX
OSC
FM B.P.F
L2,VC1,CT1 FM ANT
L3,VC2,CT2 FM OSC
T1 FM IFT
Q1 FM IF AMP
CF1
D1 FMD. AGC
L4,5 LW,MW ANTENNA
L6 SW ANT
VC5 FINE TUNING
VC4
IC2 FM/AM IF AMP, DET, AM OSC, MIX
OSC
MIXER
IF
FILTER AMP
AM DET
AGC AMP
LED DRIVE
FM IAM DET
QUAC DET
MUTE AMP
LIMITER
AF AMP
AF AMP (SW)
T2 AM IFT
CF2
T3 FM IFT
S5-2(G.EQ)
IC3 FM MPX
S5-1(G.EQ)
1/2 (19kHz)
1/2 (38kHz)
VCO (76kHz)
PHASE DETECTOR
STEREOSWITCH
DETE-CTOR
PHASE DETECTOR
TRIGGER
VR1 FM VCO
D320 FM STEREO IND.
D306 FWD IND. (TAPE 1)
D305 FWD IND. (TAPE 1)
Q317 SWITCHING (FWD IND.)
S18-3
D308 REV IND. (TAPE 2)
D307 FWD IND. (TAPE 2)
Q318 SWITCHING (FWD IND)
S19-3
Q326 AF AMP SPECTRUM ANALYZER
IC304 (100Hz)
IC305(330Hz)
IC306(1kHz)
IC307(3.3kHz)
IC308(10kHz)
IC304~308 SPECTRUM ANALYZER AMP
D322~346 LEVEL IND.(SPECTRUM ANALYZER)
<TAPE> (Lch ONLY)
J1 CD/LINE IN
IC101 PRE AMP
TAPE 2
PLAYBACK HEAD
S19-2
VR101
Q101 SWITCHING (HIGH SPEED:ON)
Q105 SWITCHING (EQ)
Q122 SWITCHING (EQ)
Q204 SWITCHING (EQ)
Q110 AF AMP
Q109,113 REC AGC DRIVE
S8-1
S7-2
IC301 DOLBY AMP
D101
D102,103 REC AGC RECT
Q315 SWITCHING TAPE PLAYBACK:ON
Q115
Q114
Q114,115 SWITCHING (RADIO REC)
S7-6
S25 S23 FF/REW PLAY
IC303 G. EQ AMP
Q118 MUTING (FF/REW:ON)
Q321~323 MUTING
S29(TUNER) D3
D3 SWITCHING BAND
D352 REVERSE CURRENT BLOCKING
VR105~111 GRAPHIC EQ VOLUME
BIAS
Q120 FILTER G. EQ
Q119 FILTER G. EQ
Q219 FILTER G. EQ
Q220 FILTER G. EQ
S6-1
S6-2
VR205~211 GRAPHIC EQ VOLUME
VR303 BALANCE
VR104 VOLUME
IC102 POWER AMP
Q121 MUTING (MIC REC:ON)
D315 REVERSE CURRENT BLOCKING
CERAMIC SPEAKER 2cm(1.4kΩ) TWEETER
PM DYNAMIC SPEAKER 5cm (6Ω) SQUAUKER
PM DYNAMIC SPEAKER 12cm×12cm(8Ω) WOOFER
HEADPHONES J5
TAPE 1
R/P HEAD
S18-1
IC201 PRE AMP
VR102
Q102 SWITCHING (REC:ON)
Q107 MUTING (REC:ON)
Q108 SWITCHING (Cro2 EQ:ON)
S13
D302 D303
D304
D347 D348
S14-1 S14-2
S7-4
Q103,301,303 SWITCHING (TAPE PLAYBACK:ON)
L101,R118,C117,120 REC EQ
L301
Q310,311 BIAS OSC
VR301
ERASE HEAD
S26 REC
S28 BEAT PROOF
BUILT-IN MIC
MIXING MIC J3
Q304 MIC AMP
VR302 MIXING LEVEL
Q306 SWITCHING (MIC)
Q307,D301 LIMITER
Q335 SWITCHING
Q308 SWITCHING (MIC)
Q116 REC AMP
VR103
Q111 SWITCHING (Cro2 REC:ON)
Q112
Q113
S10-1
S11
Q316 SWITCHING (TAPE PLAYBACK:ON)
Q112,113 FILTER (Cro2 REC EQ)
Q117 MUTING (TAPE PLAYBACK:ON)
Q319 SWITCHING (TAPE PLAYBACK:ON)
Q320 SWITCHING (REC:ON)
IC302 TPS DRIVE
WAVE FROM SHAPAR
AMP
BUFFER
REG
OUTPUT
GATE
OSC
DIFFERENTIAL CIRCUIT
PLUNGER
Q336 SWITCHING (TPS,SUPPLY ON/OFF)
S21 FF/REW
D309 REVERSE CURRENT BLOCKING
S24 MOTOR
Q327,329 MOTOR CONTROL
VR304
VR305
TAPE 1 MOTOR
PLAY S20
RELAY S12
Q331,325 TAPE SPEED CONTROL
Q332 TAPE SPEED CONTROL
S22 MOTOR
Q328,330 MOTOR CONTROL
VR306
VR307
TAPE 2 MOTOR

Notes:

1. S1~S4, S29: Band switch in "OFF" position. (Tuner circuit board)
2. S5: FM Mode switch in "MONO" position. (G. EQ circuit board)
3. S6~S8, S17: Equalizer mode/Function switch in "G. EQ/TAPE" position.
4. S10: Tape select switch in "NORMAL" position. (TAPE 1)
5. S11: Tape select switch in "NORMAL" position. (TAPE 2)
6. S12: Relay play switch in "OFF" position.
7. S13: Dolby NR switch in "OUT" position.
8. S14: Editing mode switch in "OFF/BUILT IN MIC" position.
9. S15: Power switch in "OFF" position.
10. S18: Direction switch in "FWD" position. (TAPE 1)
11. S19: Direction switch in "FWD" position. (TAPE 2)
12. S20: Playback switch. (TAPE 2)
13. S21: FF/REW switch. (TAPE 2)
14. S22: Motor switch. (TAPE 2)
15. S23: Playback switch. (TAPE 1)
16. S24: Motor switch. (TAPE 1)
17. S25: FF/REW switch. (TAPE 1)
18. S26: Record switch. (TAPE 1)
19. S27: AC/DC IN select switch in "DC" position.
20. S28: Beat proof switch.
21. VR1: FM VCO Adjustment VR.
22. VR101: Playback gain adjustment VR. Lch (TAPE 1)
23. VR102: Playback gain adjustment VR. Rch (TAPE 1)
24. VR103: Record/Playback gain adjustment VR. Lch
25. VR104, 204: Volume control VR.
26. VR105~111, 205~211: Graphic equalizer control VR.
27. VR201: Playback gain adjustment VR. Lch (TAPE 2)
28. VR202: Playback gain adjustment VR. Rch (TAPE 2)
29. VR203: Record/Playback gain adjustment VR. Rch
30. VR301: Bias current adjustment VR.
31. VR302: Mixing level control VR.
32. VR303: Balance control VR.
33. VR304: Tape speed adjustment VR, for high speed. (TAPE 1)
34. VR305: Tape speed adjustment VR, for normal speed. (TAPE 1)
35. VR306: Tape speed adjustment VR, for high speed. (TAPE 2)
36. VR307: Tape speed adjustment VR, for normal speed. (TAPE 2)

▯▯▯▷ Tape (REC) Signal Line
➡ Tape (PLAY) Signal Line
➡ Main (Radio/Tape) Signal Line
▨ Spectrum Analyzer Signal Line
⇨ Radio (FM) Signal Line

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT.

1. Set power switch to ON.
2. Set volume control to maximum.
3. Set equalizer mode to G.EQ.
4. Set graphic equalizer to center.
5. Set band switch to LW, MW, SW or FM.
6. Set balance control to center.
7. Set function switch to TUNER or TAPE.
8. Set fine tuning to center.
9. Set FM mode Switch to STEREO.
10. Set power source voltage to 15V DC.
11. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	AM-IF ALIGNMENT						
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz (470kHz ...[E] only) 30% Mod. at 400Hz	Point of non-interference. (on/about 600kHz)	Output meter across voice coil.	T2 (AM IFT)	Adjust for maximum output.
	LW-RF ALIGNMENT						
(2)	LW	〃	136kHz	Tuning capacitor fully closed.	〃	L7 (LW OSC Coil)	〃
(3)	LW	〃	297kHz	Tuning capacitor fully open.	〃	CT6 (LW OSC Trimmer)	〃
(4)	LW	〃	145kHz	Tune to signal.	〃	(∗1) L4 (LW ANT Coil)	Adjust for maximum output. Adjust L4 by moving coil bobbin along ferrite core.
(5)	LW	〃	285kHz	〃	〃	CT3 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	MW-RF ALIGNMENT						
(6)	MW	〃	511kHz	Tuning capacitor fully closed.	〃	L8 (MW OSC Coil)	Adjust for maximum output.
(7)	MW	〃	1,650kHz	Tuning capacitor fully open.	〃	CT7 (MW OSC Trimmer)	〃
(8)	MW	〃	550kHz	Tune to signal.	〃	(∗1) L5 (MW ANT Coil)	Adjust for maximum output. Adjust L5 by moving coil bobbin along ferrite core.
(9)	MW	〃	1,500kHz	〃	〃	CT4 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).
	(∗1) Cement antenna bobbin with wax after completing alignment.						
	SW-RF ALIGNMENT						
(10)	SW	Connect to test point ▼1 through ceramic capacitor (10pF). Negative side to test point ▼2.	5.75MHz	Tuning capacitor fully closed.	〃	L9 (SW OSC Coil)	Adjust for maximum output.
(11)	SW		18.8MHz	Tuning capacitor fully open.	〃	CT8 (SW OSC Trimmer)	〃
(12)	SW		5.9MHz	Tune to signal.	〃	L6 (SW ANT Coil)	Adjust for maximum output. Repeat steps (10)~(12).

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	FM-IF ALIGNMENT						
(1)	FM	High side thru. 0.001μF to test point ▼3. Negative side to test point ▼2.	10.7MHz (SWP.)	Point of non-interference. (on/about 90MHz)	Connect vert. amp. of scope to test point ▼4. Negative side to test point ▼5.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)
(2)	FM	〃	〃	〃	〃	T3 (FM-2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 4.)

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	FM-RF ALIGNMENT						
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2MHz (87.4MHz... [G] only)	Variable capacitor fully closed.	Output meter across voice coil.	L3 (FM OSC Coil)	(∗2) Adjust for maximum output.
(4)	FM		109.2MHz (108.3MHz... [G] only)	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer) (CT9... I G only)	〃
(5)	FM		106MHz	Tune to signal.	〃	CT1 (FM ANT Trimmer)	(∗2) Adjust for maximum output. Repeat steps (3)~(5).
	CT2 adjustment to center before FM-RF ALIGNMENT. (For Itary, Finland and F.R. Germany) (∗2) Three output responses will be present; proper tuning is the center frequency.						

■ SEPARATION ALIGNMENT

	ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
(1)	Adjustment of pilot signal	98 MHz, 60 dB (CW) Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	▼6... (+) ▼7... (−)	VR1	19 kHz	Adjust VR1, for 19 kHz (±50Hz) reading on electronics counter.

■ TAPE ADJUSTMENT

	ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
(1)	Azimuth	QZZCFM (8kHz, −20dB)	SP OUT (AC voltmeter & Oscilloscope)	Maximum output.	Azimuth screw (FWD, REV)	Playback mode Mode switch → STEREO/I (Refer to Fig. 5)
(2)	Rec Bias Current	———	▼9 ...(+) ▼10 ...(−)	Tape selector Normal... 18±0.5mV CrO_2..... 25±15mV	VR301	FM Mode B.P → Mono/II Tape selector → Normal Function selector → Radio (AM) (Refer to Fig. 10)
(3)	Playback Gain (Tape 1 & 2)	QZZCLA (315Hz, 0dB)	TP3 ▼L...(+) Lch ▼E...(−) ▼R...(+) Rch	35±5mV	(Tape 1) VR101 ... Lch VR102 ... Rch (Tape 2) VR201 ... Lch VR202 ... Rch	Playback mode (FWD and REV playback)
(4)	Record/ Playback Gain	Line IN f=1kHz, −10dB	Line OUT	Output voltage ...0±1dB	VR103 (Lch) VR203 (Rch)	1. Apply a −10dB 1kHz signal from the line input terminal. 2. Measure the output voltage of line output terminals. 3. Then, with the unit in the record mode and, record the signal. 4. Playback the recorded part, and measure the output voltage of line output terminals. 5. Compare the output volatage measured in items 2 and 4, and adjust so there is no difference in the level. (Adjust to obtain 0±1dB.)

■ TAPE SPEED ADJUSTMENTTAPE ADJUSTMENT

	ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	REMARKS
(1)	Tape speed adjustment for high speed. Tape 1 & 2	QZZCWAT (3kHz) Use QZZCWC (1.5kHz) tape when using a wow/flutter meter.	SP OUT	VR306 (Tape 2) VR304 (Tape 1)	1. Short TP 1 as shown in the Fig. 2 above to enter the hight speed mode. Tape 2 ... 6040±40Hz (3020±20Hz) Tape 1 ... −30±30Hz of tape speed of tape 2 (Refer to Fig. 6 & 7 when using a wow/flutter meter)

	ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	REMARKS
(2)	Tape speed adjustment for normal speed. Tape 1 & 2	QZZCWAT (3kHz)	SP OUT	VR307 (Tape 2) VR305 (Tape 1)	1. Open TP 1 and set the tape speed to normal. 2. Tape 2 ... 3030±20Hz Tape 1 ... −15±15Hz of the speed of tape 2 (Refer to Fig. 8 & 9 when using a wow/flutter meter)

Note:

1. Adjust the tape speed by first adjusting the hight speed. Do not adjust the hight speed after adjusting the normal speed. (The normal speed changes if the hight speed is adjusted afterwards)
2. Adjust the tape advance speed in the following order: tape 2 hight, normal speed; tape 1 hight, normal speed.

■ ALIGMENT POINT

* Please refer to Circuit Board and Wiring Connection Diagram of test points location.

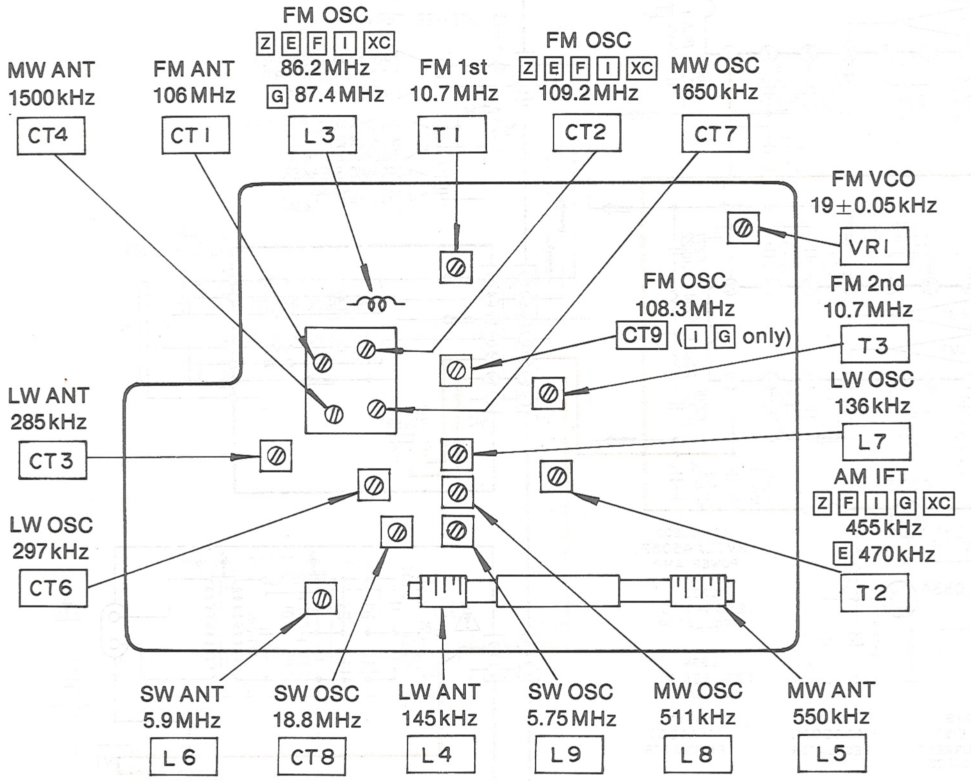

MW ANT 1500kHz CT4
FM ANT 106MHz CT1
FM OSC Z E F I XC 86.2MHz G 87.4MHz L3
FM 1st 10.7MHz T1
FM OSC Z E F I XC 109.2MHz CT2
MW OSC 1650kHz CT7
FM VCO 19±0.05kHz VR1
FM OSC 108.3MHz CT9 (I G only)
FM 2nd 10.7MHz T3
LW OSC 136kHz L7
AM IFT Z F I G XC 455kHz E 470kHz T2
LW ANT 285kHz CT3
LW OSC 297kHz CT6
SW ANT 5.9MHz L6
SW OSC 18.8MHz CT8
LW ANT 145kHz L4
SW OSC 5.75MHz L9
MW OSC 511kHz L8
MW ANT 550kHz L5

Fig. 1

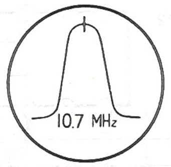


Fig. 3

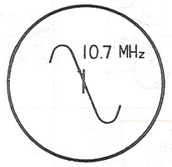


Fig. 4

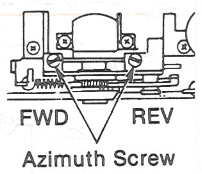

FWD
REV
Azimuth Screw

Fig. 5

- NEEDLE POSITION OF THE DRIFT METER (High speed)

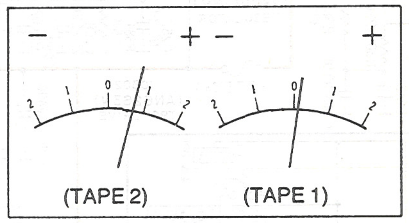

−
+
−
+
(TAPE 2)
(TAPE 1)

Fig. 6 Fig. 7

- NEEDLE POSITION OF THE DRIFT METER (Normal speed)

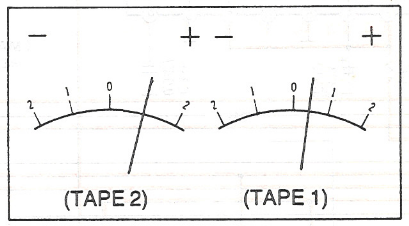

−
+
−
+
(TAPE 2)
(TAPE 1)

Fig. 8 Fig. 9

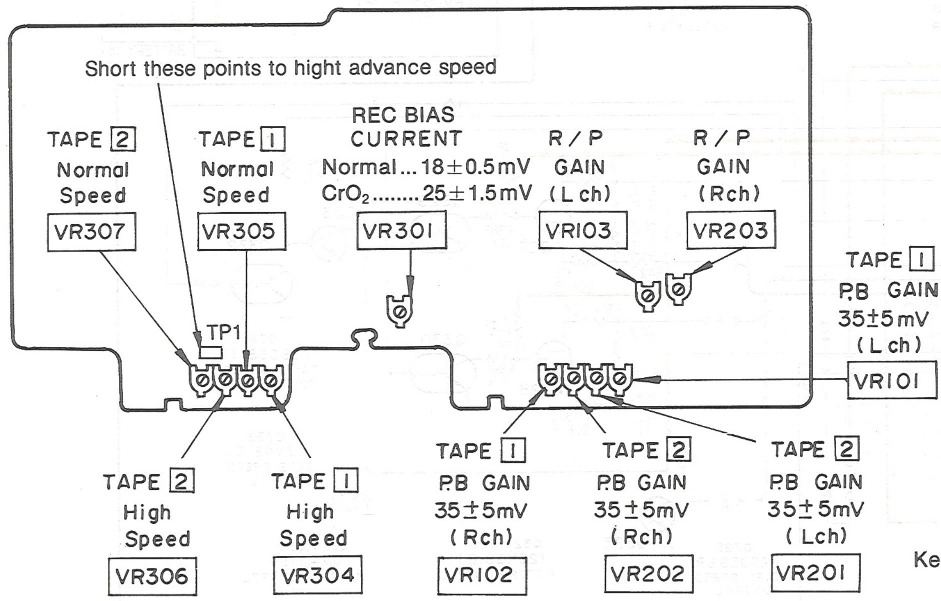
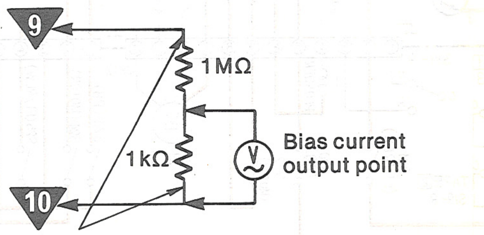

Short these points to hight advance speed
TAPE 2 Normal Speed VR307
TAPE 1 Normal Speed VR305
REC BIAS CURRENT Normal ... 18±0.5mV CrO2 .... 25±1.5mV VR301
R/P GAIN (Lch) VR103
R/P GAIN (Rch) VR203
TAPE 1 PB GAIN 35±5mV (Lch) VR101
TP1
TAPE 2 High Speed VR306
TAPE 1 High Speed VR304
TAPE 1 PB GAIN 35±5mV (Rch) VR102
TAPE 2 PB GAIN 35±5mV (Rch) VR202
TAPE 2 PB GAIN 35±5mV (Lch) VR201

Fig. 2

Note: Short TP 1 to adjust the hight speed mode.

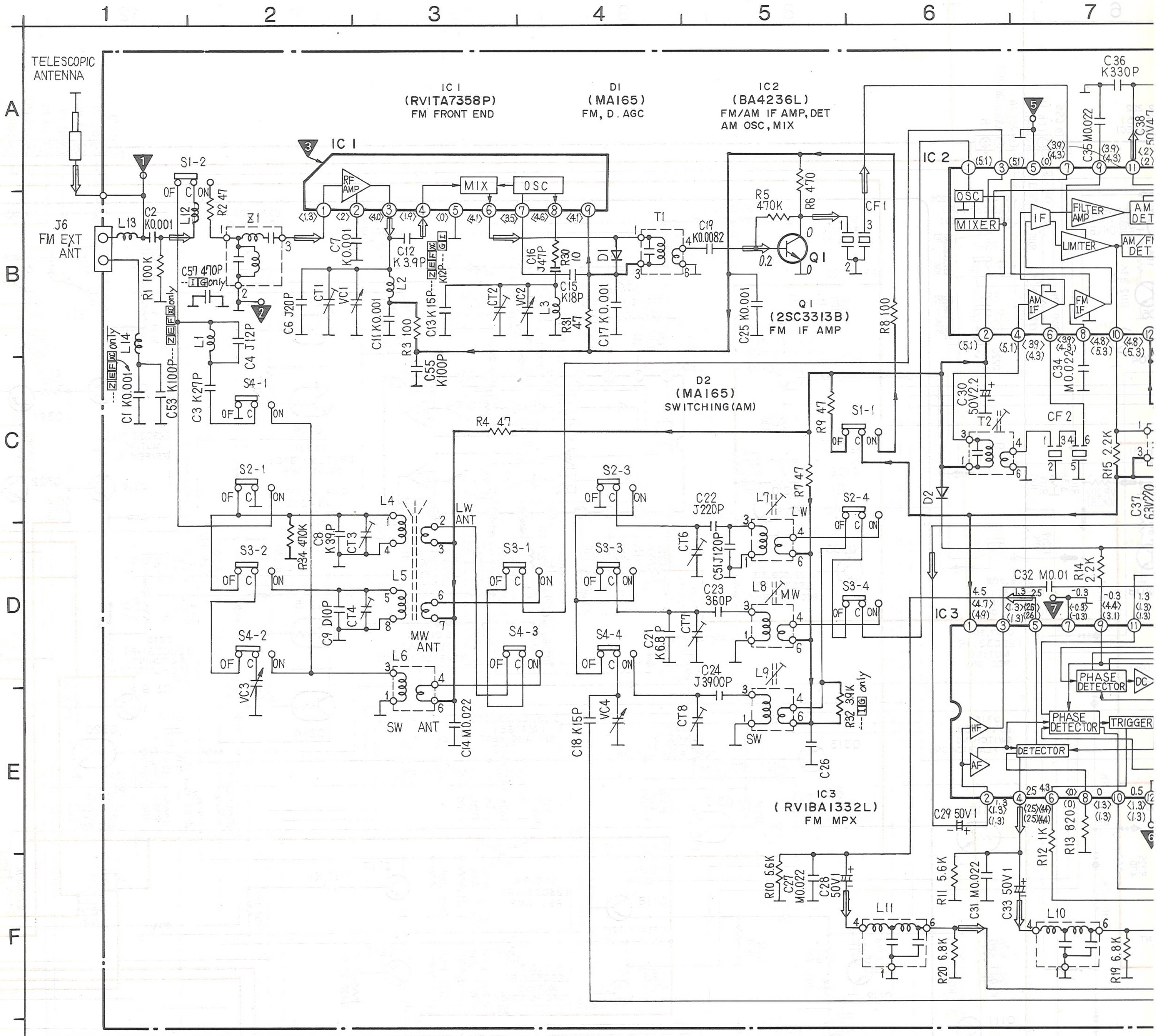

9
10
1MΩ
1kΩ
V
Bias current output point

Keep these cords short. (Lien capacitance: 3pF of less)

- In order not to influence the bias oscillation, divide the voltage with 1MΩ and 1kΩ resistors, and measure the voltage across the 1kΩ resistor.

Fig. 10

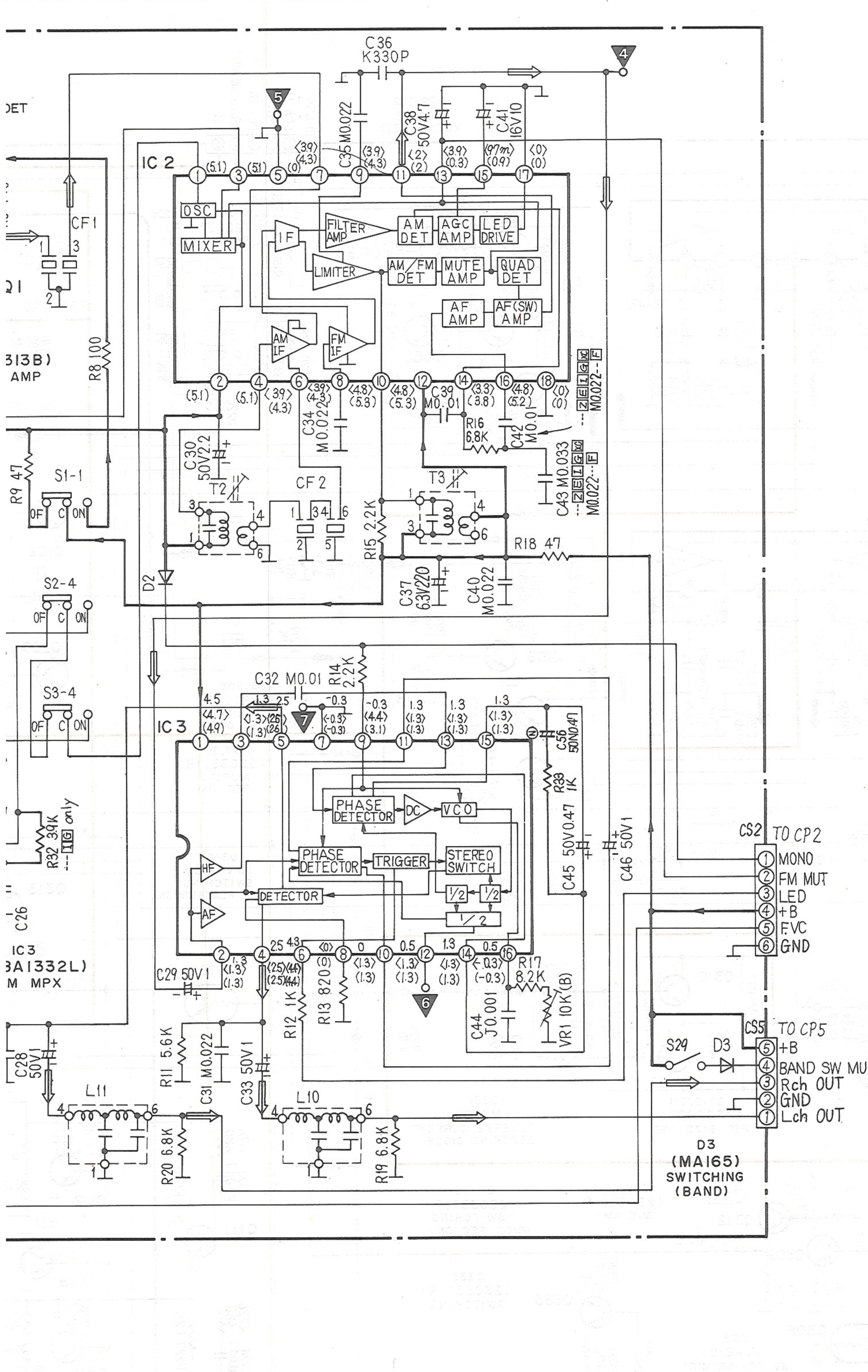
SCHEMATIC DIAGRAM (TUNNER)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
TELESCOPIC ANTENNA
J6 FM EXT ANT
IC1 (RVITA7358P) FM FRONT END
D1 (MA165) FM, D. AGC
IC2 (BA4236L) FM/AM IF AMP, DET AM OSC, MIX
IC 2
RF AMP
MIX
OSC
MIXER
IF
FILTER AMP
LIMITER
AM DET
AM/FM DET
Q1 (2SC3313B) FM IF AMP
D2 (MA165) SWITCHING (AM)
IC3 (RVIBA1332L) FM MPX
IC 3
PHASE DETECTOR
TRIGGER
DETECTOR
S1-1
S1-2
S2-1
S2-3
S2-4
S3-1
S3-2
S3-3
S3-4
S4-1
S4-2
S4-3
S4-4
LW ANT
MW ANT
SW ANT
SW
LW
MW
T1
T2
CF1
CF2
L4
L5
L6
L7
L8
L9
L10
L11
L13
L14
R4 47
R5 470K
R6 470
C36 K330P

Notes:

1. S1-1, S1-2, S2-1, S2-3, S2-4, S3-1~S3-4, S4-1~S4-4, S29:
   Band switch in "OFF" position.
   (S1...FM, S2...LW, S3...MW, S4...SW, S29 ... Band muting)
2. VR1: FM VCO Adjustment VR.
3. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
   〈 〉... FM, ( ) ... AM
4. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes.
   One type number is used for supply parts number and production parts number which they are identical.
   e.g. Q1
   2SC2412NRTB, LNSTB ← Production parts number
   (2SC2412) ← Supply parts number
5. THe supp
   replacem
6. The mark
- **This sch**
  with the

GRAM (TUNNER)


6
7
8
9
C36 K330P
IC 2
OSC
MIXER
IF
FILTER AMP
AM DET
AGC AMP
LED DRIVE
LIMITER
AM/FM DET
MUTE AMP
QUAD DET
AF AMP
AF(SW) AMP
AM IF
FM IF
CF1
CF 2
T2
T3
R8 100
R9 47
S1-1
S2-4
S3-4
D2
C30 50V2.2
C34 M0.022
C35 M0.022
C38 50V4.7
C41 16V10
C39 M0.01
R16 6.8K
C42 M0.01
C43 M0.033
R15 2.2K
R18 47
C37 63V220
C40 M0.022
C32 M0.01
R14 2.2K
IC 3
PHASE DETECTOR
DC
VCO
TRIGGER
STEREO SWITCH
DETECTOR
HF
AF
R39 1K
C56 50V0.47
C45 50V0.47
C46 50V1
R32 34K
C26
IC3 (BA1332L) M MPX
C28 50V1
C29 50V1
R11 5.6K
C31 M0.022
C33 50V1
R12 1K
R13 820
C44 J0.001
R17 8.2K
VR1 10K(B)
L11
L10
R20 6.8K
R19 6.8K
CS2 TO CP2
MONO
FM MUT
LED
+B
F.VC
GND
CS5 TO CP5
+B
BAND SW MUT
Rch OUT
GND
Lch OUT
S24
D3
D3 (MA165) SWITCHING (BAND)

iagram are two types of
s number and production parts
d diodes.
for supply parts number and
which they are identical.

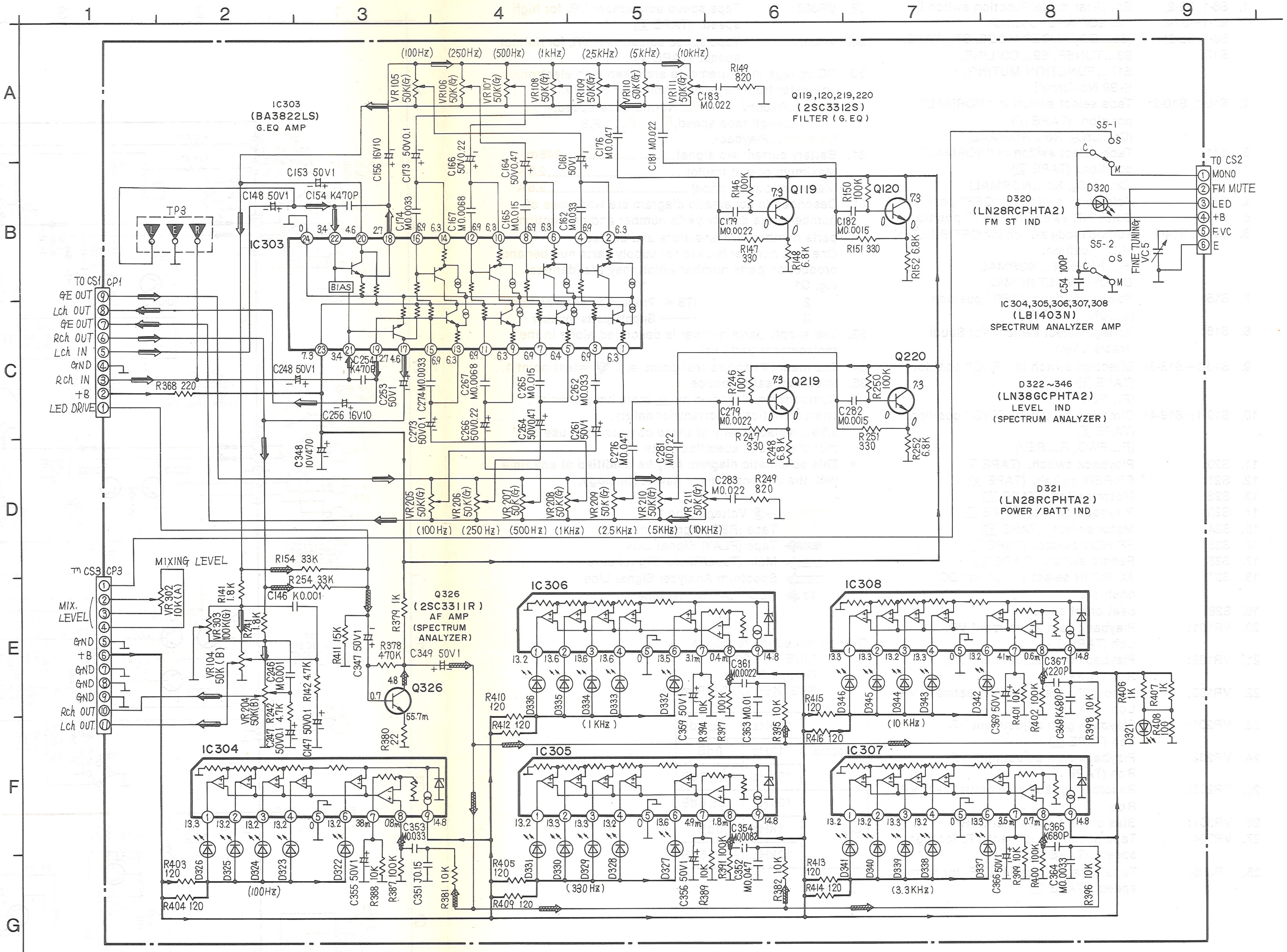
← Production parts number
—— Supply parts number

5. THe supply parts number is described alone in the replacement parts list.
6. The mark (▼) shows test point. e.g. ▼ =test point 1.

- **This schematic diagram may be modified at any time with the development of new technology.**

➡ +Ⓑ Voltage Line
⇨ Radio (FM) Signal Line

SCHEMATIC DIAGRAM (GRAPHIC EQUALIZER)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
IC303 (BA3822LS) G.EQ AMP
(100Hz) (250Hz) (500Hz) (1kHz) (2.5kHz) (5kHz) (10kHz)
VR105 50K(G)
VR106 50K(G)
VR107 50K(G)
VR108 50K(G)
VR109 50K(G)
VR110 50K(G)
VR111 50K(G)
R149 820
C183 M0.022
Q119,120,219,220 (2SC3312S) FILTER (G.EQ)
Q119
Q120
Q219
Q220
S5-1
S5-2
TO CS2
MONO
FM MUTE
LED
+B
F.VC
E
D320 (LN28RCPHTA2) FM ST IND
FINE TUNING VC5
C54 100P
IC304,305,306,307,308 (LB1403N) SPECTRUM ANALYZER AMP
D322~346 (LN38GCPHTA2) LEVEL IND (SPECTRUM ANALYZER)
D321 (LN28RCPHTA2) POWER / BATT IND
TP3
L E R
C153 50V1
C148 50V1
C154 K470P
BIAS
TO CS1 CP1
GE OUT
Lch OUT
GE OUT
Rch OUT
Lch IN
GND
Rch IN
+B
LED DRIVE
R368 220
C248 50V1
C254 K470P
C256 16V10
C348 10V470
VR205 50K(G)
VR206 50K(G)
VR207 50K(G)
VR208 50K(G)
VR209 50K(G)
VR210 50K(G)
VR211 50K(G)
(100Hz) (250Hz) (500Hz) (1KHz) (2.5KHz) (5KHz) (10KHz)
R249 820
C283 M0.022
MIXING LEVEL
TO CS3 CP3
MIX. LEVEL
VR302 10K(A)
R154 33K
R254 33K
C146 K0.001
VR303 100K(G)
VR104 50K(B)
VR204 50K(B)
GND
+B
GND
GND
GND
Rch OUT
Lch OUT
Q326 (2SC3311R) AF AMP (SPECTRUM ANALYZER)
C349 50V1
R378 470K
R379 1K
R380 22
R410 120
R412 120
IC306
IC308
IC304
IC305
IC307
(1 KHz)
(10 KHz)
(100Hz)
(390 Hz)
(3.3KHz)
R403 120
R404 120
R405 120
R409 120
R413 120
R414 120
R415 120
R416 120
R406 1K
R407 1K
R408 100

Notes:
1. S5-1, S5-2: FM Mode switch in "MONO position. (S/I…STEREO/I, M/II…MONO/II)
2. VR104, 204: Volume control VR.
3. VR105~111, 205~211: Graphic equalizer control VR.
4. VR302: Mixing level adjustment VR.
5. VR303: Balance control VR.
6. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery. No. mark…Playback
7. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type number is used for supply parts number and production parts number which they are identical. **e.g. Q1**
   2SC2412NRTB, LNSTB ← Production parts number
   (2SC2412) ←———— Supply parts number
8. The supply parts number is described alone in the replacement parts list.
9. The mark (▼) shows test point. e.g. ▼ =test point L.

- **This schematic diagram may be modified at any time with the development of new technology.**

➡ +Ⓑ Voltage Line
▨ Spectrum Analyzer Signal Line
⇨ Main (Radio/Tape) Signal Line

Notes:

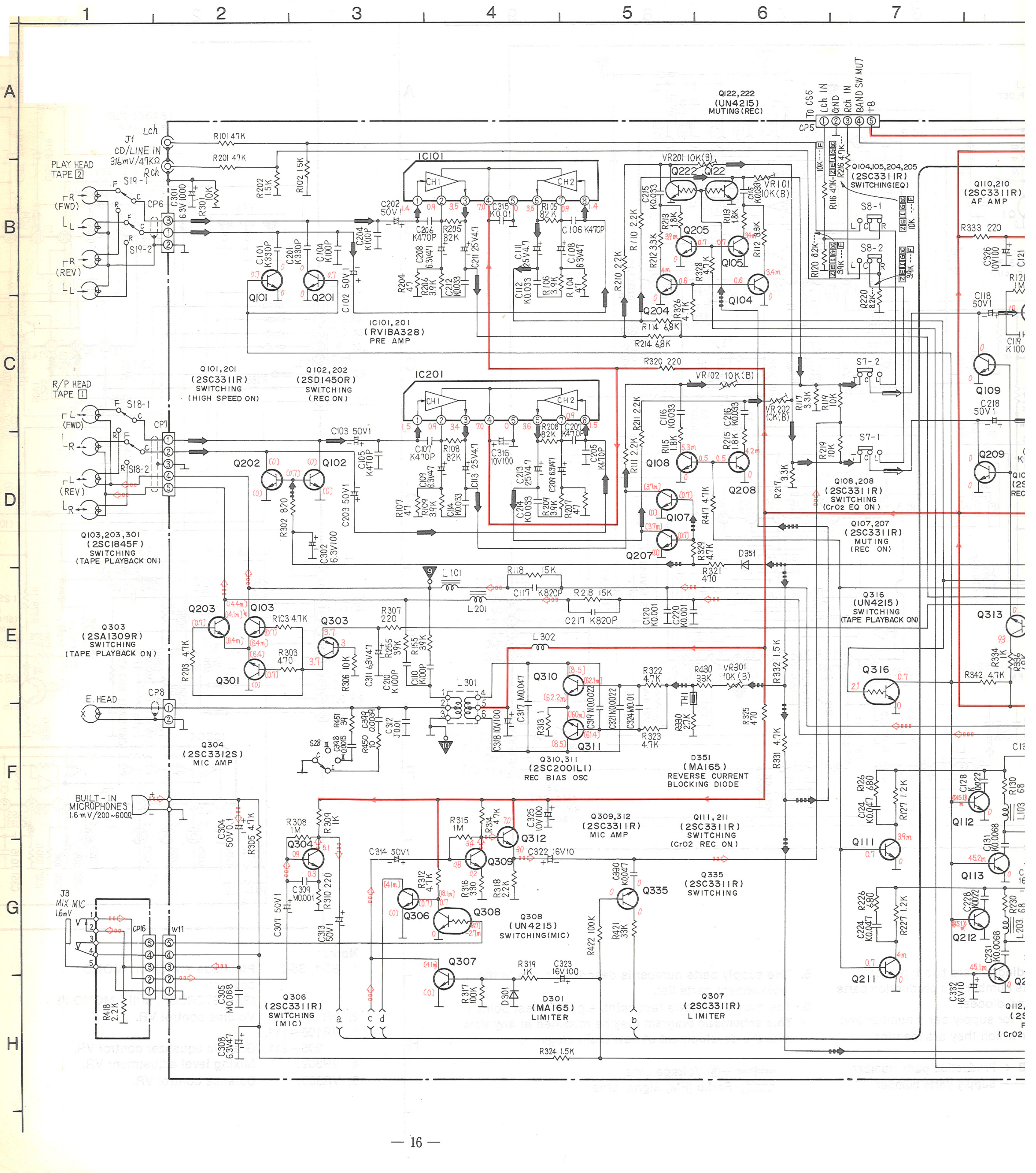
1. S6-1, S6-2, S7-1～S7-6, S8-1, S8-2, S17: Equalizer mode/Function switch in "G. EQ/TAPE" position.
   (S6…EQUALIZER MODE, S7…TAPE, S8…TUNER, S9…CD/LINE, S17…FUNCTION MUTING)
   ※S9 No Circuit
2. S10-1, S10-2: Tape select switch in "NORMAL" position. (TAPE 1)
   (Cr…CrO_2, No…NORMAL)
3. S11: Tape select switch in "NORMAL" position. (TAPE 2)
   (Cr…CrO_2, No…NORMAL)
4. S12: Relay play switch in "OFF" position.
5. S13: Dolby NR switch in "OUT" position.
6. S14-1, S14-2: Editing mode switch in "OFF/BUILT IN MIC" position.
   (H…HIGH, N…NORMAL, O…OFF/BUILT IN MIC)
7. S15: Power switch in "OFF" position.
   (1…ON, 3…OFF)
8. S16: Voltage select switch. (for Saudi Arabia only.)
9. S18-1～S18-3: Direction switch in "FWD" position. (TAPE 1)
   (F…FWD, R…REV)
10. S19-1～S19-4: Direction switch in "FWD" position. (TAPE 2)
    (F…FWD, R…REV)
11. S20: Playback switch. (TAPE 2)
12. S21: FF/REW switch. (TAPE 2)
13. S22: Motor switch. (TAPE 2)
14. S23: Playback switch. (TAPE 1)
15. S24: Motor switch. (TAPE 1)
16. S25: FF/REW switch. (TAPE 1)
17. S26: Record switch. (TAPE 1)
18. S27: AC/DC IN select switch in "DC" position.
19. S28: Beat proof switch.
20. VR101: Playback gain adjustment VR. Lch (TAPE 1)
21. VR102: Playback gain adjustment VR. Rch (TAPE 1)
22. VR103: Record/Playback gain adjustment VR. Lch
23. VR201: Playback gain adjustment VR. Lch (TAPE 2)
24. VR202: Playback gain adjustment VR. Rch (TAPE 2)
25. VR203: Record/Playback gain adjustment VR. Rch
26. VR301: Bias current adjustment VR.
27. VR304: Tape speed adjustment VR, for high speed. (TAPE 1)
28. VR305: Tape speed adjustment VR, for normal speed. (TAPE 1)
28. VR306: Tape speed adjustment VR, for high speed. (TAPE 2)
29. VR307: Tape speed adjustment VR, for normal speed. (TAPE 2)
30. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
    [ ]…Record, (( ))…Normal tape speed,
    《 》…High tape speed, [[ ]]…T.P.S.
    No mark…Playback
31. Battery current:No signal………………248 mA
    Maximum output (radio)………………2.3 A
    Maximum output (tape)………………2.6 A
32. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes.
    One type number is used for supply parts number and production parts number which they are identical.
    e.g. Q1
    2SC2412NRTB, LNSTB ◄— Production parts number
    (2SC2412) ◄———— Supply parts number
33. The supply parts number is described alone in the replacement parts list.
34. The mark (▼) shows test point. e.g. ▼1 =test point 1.
35. Important safety notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.

- **This schematic diagram may be modified at any time with the development of new technology.**

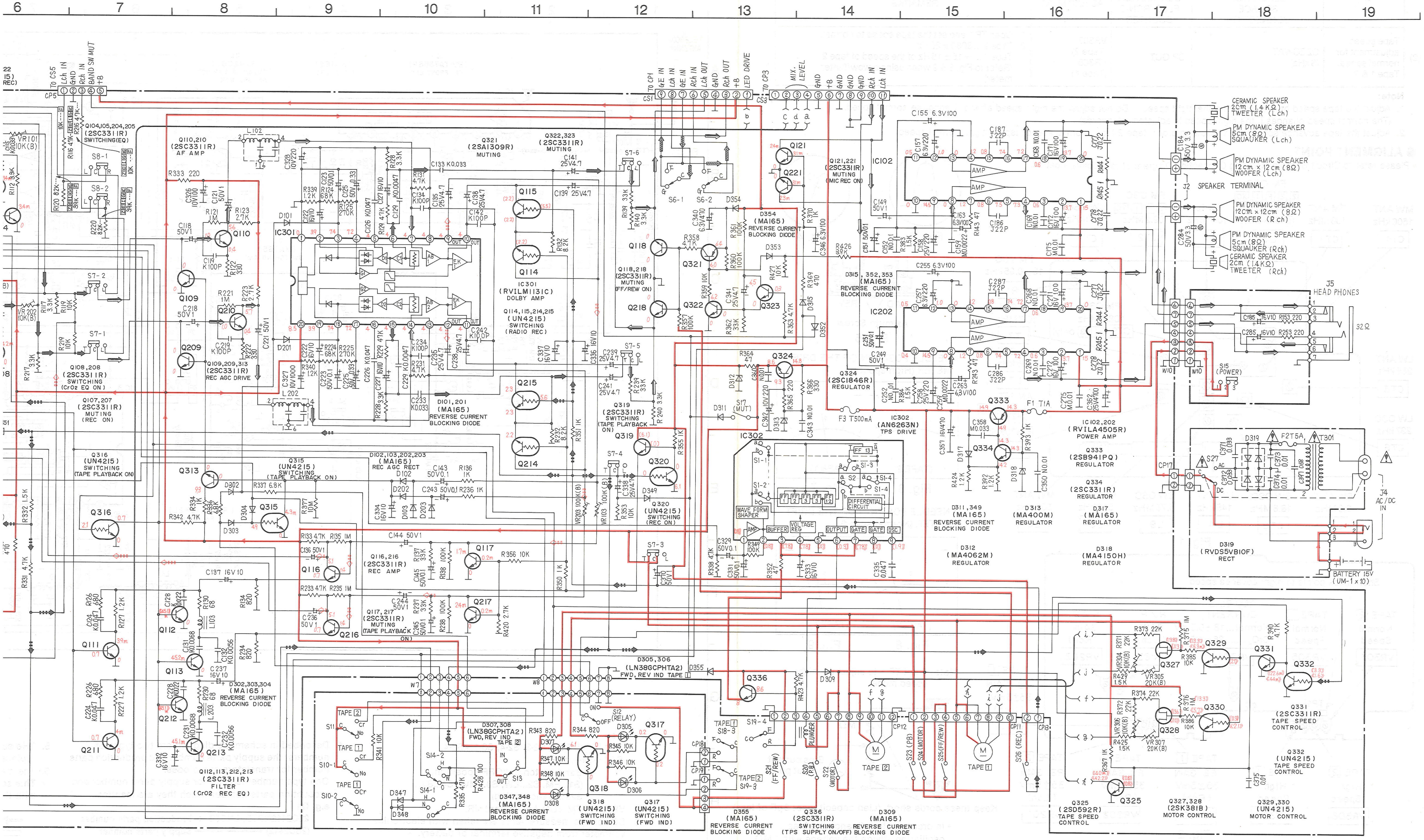
➡ +Ⓑ Voltage Line
⇨ Tape (REC) Signal Line
➡ Tape (PLAY) Signal Line
⇨ Main (Tape/Radio) Signal Line
▨ Spectrum Analyzer Signal Line
➡ REC/PLAY Signal Line

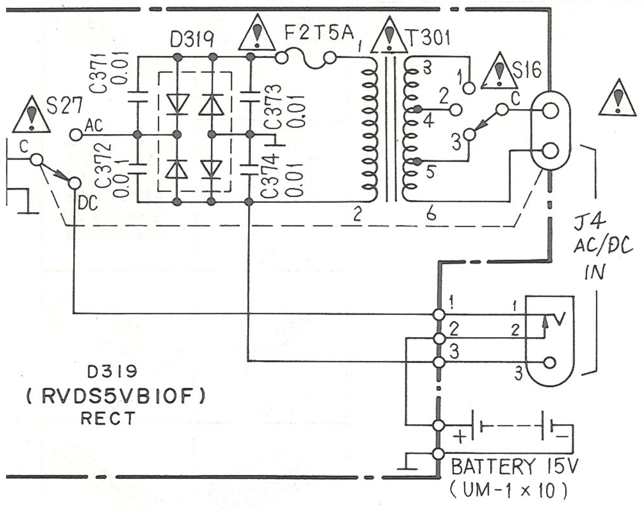
Over-all frequency response
LINE IN −22dB
Dolby NR. IN
SPEAKER OUT (VR max)

Normal	100 Hz	0±6dB
	1 kHz	0 dB
	10 kHz	−4±6dB
CrO_2	100 Hz	0±6dB
	1 kHz	0 dB
	10 kHz	−4±6dB

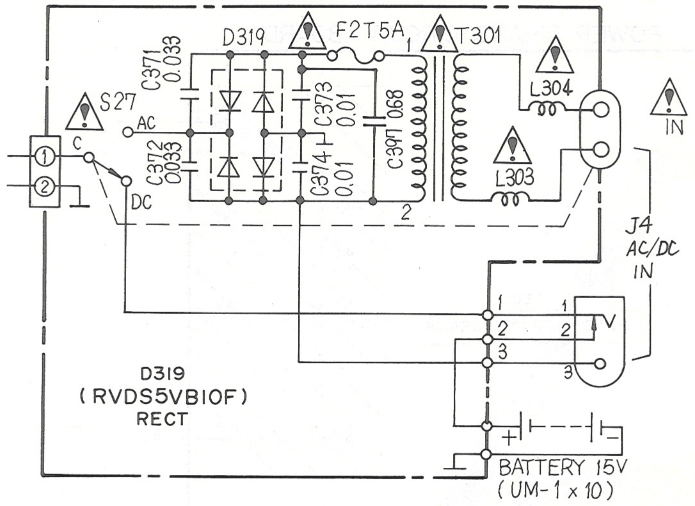

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
J1 CD/LINE IN 316mV/47KΩ
PLAY HEAD TAPE 2
(FWD)
(REV)
S19-1
S19-2
CP6
R101 47K
R201 47K
IC101
C202 50V1
R105 82K
R205 82K
C106 K470P
Q101
Q201
IC101,201 (RVIBA328) PRE AMP
VR201 10K(B)
Q222
Q122
VR101 10K(B)
Q205
Q105
Q204
Q104
R114 6.8K
R214 6.8K
Q122,222 (UN4215) MUTING(REC)
To CS5 Lch IN GND Rch IN BAND SW MUT +B
CP5
Q104,105,204,205 (2SC3311R) SWITCHING(EQ)
S8-1
S8-2
Q110,210 (2SC3311R) AF AMP
R333 220
Q101,201 (2SC3311R) SWITCHING (HIGH SPEED ON)
Q102,202 (2SD1450R) SWITCHING (REC ON)
R/P HEAD TAPE 1
S18-1
S18-2
CP7
IC201
C103 50V1
Q202
Q102
R108 82K
R208 82K
R320 220
VR102 10K(B)
VR202 10K(B)
S7-2
S7-1
Q108
Q208
Q107
Q207
Q109
Q209
Q108,208 (2SC3311R) SWITCHING (CrO2 EQ ON)
Q107,207 (2SC3311R) MUTING (REC ON)
Q103,203,301 (2SC1845F) SWITCHING (TAPE PLAYBACK ON)
L101
L201
R118 15K
R218 15K
C117 K820P
C217 K820P
D351
Q203
Q103
Q303
R103 47K
Q301
Q303 (2SA1309R) SWITCHING (TAPE PLAYBACK ON)
Q316 (UN4215) SWITCHING (TAPE PLAYBACK ON)
Q313
Q316
L302
L301
Q310
Q311
R322 4.7K
R430 39K
VR301 10K(B)
R323 4.7K
Q310,311 (2SC2001L1) REC BIAS OSC
D351 (MA165) REVERSE CURRENT BLOCKING DIODE
E. HEAD
CP8
S28
Q304 (2SC3312S) MIC AMP
BUILT-IN MICROPHONES 1.6mV/200~600Ω
R308 1M
Q304
R315 1M
Q312
Q309
C314 50V1
C322 16V10
Q306
Q308
Q335
Q309,312 (2SC3311R) MIC AMP
Q111,211 (2SC3311R) SWITCHING (CrO2 REC ON)
Q335 (2SC3311R) SWITCHING
Q308 (UN4215) SWITCHING(MIC)
Q111
Q112
Q113
Q211
Q212
J3 MIX MIC 1.6mV
CP16
W11
R418 2.2K
Q307
R319 1K
C323 16V100
D301 (MA165) LIMITER
Q306 (2SC3311R) SWITCHING (MIC)
Q307 (2SC3311R) LIMITER
R324 1.5K
R342 4.7K

SCHEMATIC DIAGRAM (AUDIO)


6
7
8
9
10
11
12
13
14
15
16
17
18
19
To CS5
Lch IN
GND
Rch IN
BAND SW MUT
+8
CP5
Q104,105,204,205
(2SC3311R)
SWITCHING(EQ)
Q110,210
(2SC3311R)
AF AMP
L102
Q321
(2SA1309R)
MUTING
Q322,323
(2SC3311R)
MUTING
IC301
Q115
Q114
IC301
(RVILM1131C)
DOLBY AMP
Q114,115,214,215
(UN4215)
SWITCHING
(RADIO REC)
D101,201
(MA165)
REVERSE CURRENT
BLOCKING DIODE
Q108,208
(2SC3311R)
SWITCHING
(CrO2 EQ ON)
Q107,207
(2SC3311R)
MUTING
(REC ON)
Q109,209,313
(2SC3311R)
REC AGC DRIVE
Q316
(UN4215)
SWITCHING
(TAPE PLAYBACK ON)
Q315
(UN4215)
SWITCHING
(TAPE PLAYBACK ON)
D102,103,202,203
(MA165)
REC AGC RECT
Q116,216
(2SC3311R)
REC AMP
Q117,217
(2SC3311R)
MUTING
(TAPE PLAYBACK ON)
Q112,113,212,213
(2SC3311R)
FILTER
(CrO2 REC EQ)
D302,303,304
(MA165)
REVERSE CURRENT
BLOCKING DIODE
D305,306
(LN38GCPHTA2)
FWD, REV IND TAPE 1
D307,308
(LN38GCPHTA2)
FWD, REV IND
TAPE 2
D347,348
(MA165)
REVERSE CURRENT
BLOCKING DIODE
Q318
(UN4215)
SWITCHING
(FWD IND)
Q317
(UN4215)
SWITCHING
(FWD IND)
S12
(RELAY)
To CP1
CS1
GND
To CP3
CS3
MIX. LEVEL
LED DRIVE
D354
(MA165)
REVERSE CURRENT
BLOCKING DIODE
Q118,218
(2SC3311R)
MUTING
(FF/REW ON)
Q319
(2SC3311R)
SWITCHING
(TAPE PLAYBACK ON)
Q320
(UN4215)
SWITCHING
(REC ON)
Q121,221
(2SC3311R)
MUTING
(MIC REC ON)
IC102
IC202
D315, 352, 353
(MA165)
REVERSE CURRENT
BLOCKING DIODE
Q324
(2SC1846R)
REGULATOR
IC302
(AN6263N)
TPS DRIVE
IC302
WAVE FORM SHAPER
BUFFER
VOLTAGE REG
OUTPUT
GATE
GATE
OSC
DIFFERENTIAL CIRCUIT
F3 T500mA
F1 T1A
Q333
Q334
IC102,202
(RVILA4505R)
POWER AMP
Q333
(2SB941PQ)
REGULATOR
Q334
(2SC3311R)
REGULATOR
D311,349
(MA165)
REVERSE CURRENT
BLOCKING DIODE
D313
(MA400M)
REGULATOR
D317
(MA165)
REGULATOR
D312
(MA4062M)
REGULATOR
D318
(MA4150H)
REGULATOR
CERAMIC SPEAKER
2cm (1.4KΩ)
TWEETER (Lch)
PM DYNAMIC SPEAKER
5cm (8Ω)
SQUAUKER (Lch)
PM DYNAMIC SPEAKER
12cm x 12cm (8Ω)
WOOFER (Lch)
J2 SPEAKER TERMINAL
PM DYNAMIC SPEAKER
12cm x 12cm (8Ω)
WOOFER (Rch)
PM DYNAMIC SPEAKER
5cm (8Ω)
SQUAUKER (Rch)
CERAMIC SPEAKER
2cm (1.4KΩ)
TWEETER (Rch)
J5
HEAD PHONES
32Ω
S15
(POWER)
F2 T5A
T301
CP17
J4
AC/DC IN
D319
(RVDS5VB10F)
RECT
BATTERY 15V
(UM-1 x 10)
Q336
D309
D355
(MA165)
REVERSE CURRENT
BLOCKING DIODE
Q336
(2SC3311R)
SWITCHING
(TPS SUPPLY ON/OFF)
D309
(MA165)
REVERSE CURRENT
BLOCKING DIODE
TAPE 1
TAPE 2
S21 (FF/REW)
S20 (P.B)
S22 (MOTOR)
PLUNGER
S23 (PB)
S24 (MOTOR)
S25 (FF/REW)
S26 (REC)
M
Q325
Q327
Q328
Q329
Q330
Q331
Q332
Q325
(2SD592R)
TAPE SPEED
CONTROL
Q327,328
(2SK381B)
MOTOR CONTROL
Q329,330
(UN4215)
MOTOR CONTROL
Q331
(2SC3311R)
TAPE SPEED
CONTROL
Q332
(UN4215)
TAPE SPEED
CONTROL



(For Saudi Arabia.)



(For Italy, Finland and F.R. Germany.)

ELECTRICAL PARTS LOCATION

(Z).........For all European areas except (E)(F)(I)(G).
(E).........For United Kingdom.
(F).........For France.
(I) ....For Italy and Finland.
(G) ....For F.R. Germany.
(XC)......For Saudi Arabia.

REPLACEMENT PARTS LIST

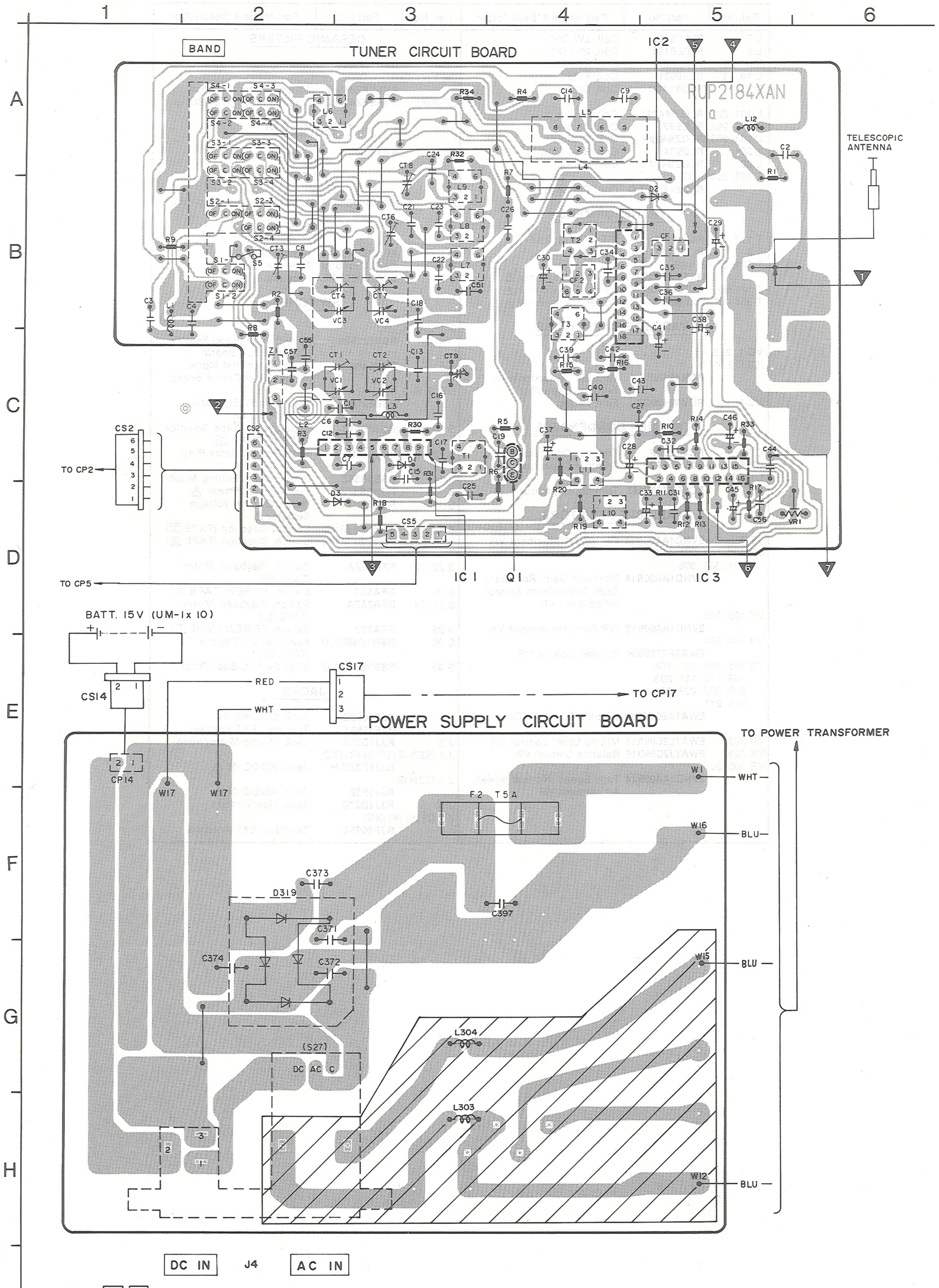
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part No.	Part Name & Description
	INTEGRATED CIRCUITS	
IC 1	**RViTA7358P**	IC (FM FRONT END)
IC 2	**BA4236L**	IC (FM/AM IF AMP, DET, AM OSC, MIX)
IC 3	**RViBA1332L**	IC (FM MPX)
IC 101, 201	**RViBA328**	IC (PRE AMP)
IC 102, 202	**RViLA4505R**	IC (POWER AMP)
IC 301	**RViLM1131C**	IC (DOLBY)
IC 302	**AN6263N**	IC (TPS DRIVE)
IC 303	**BA3822LS**	IC (Graphic Equalizer AMP)
IC 304, 305, 306, 307, 308	**LB1403N**	IC (SPECTRUM ANALYZER AMP)
	TRANSISTORS	
Q 1	**2SC3313BTA**	Transistor (FM IF AMP)
Q 101, 104, 105, 107, 108, 109, 110, 111, 112, 113, 116, 117, 118, 121, 201, 204, 205, 207, 208, 209, 210, 211, 212, 213, 216, 217, 218, 221, 306, 307, 309, 312, 313, 319, 322, 323, 331, 334, 335, 336	**2SC3311RTA**	Transistor (SWITCHING, AF AMP, etc.)
Q 102, 202	**2SD1450R**	Transistor (SWITCHING)
Q 103, 203, 301	**2SC1845F**	Transistor (SWITCHING)
Q 114, 115, 122, 214, 215, 222, 308, 315, 316, 317, 318, 320, 329, 330, 332	**UN4215TA**	Transistor (SWITCHING, MOTOR CONTROL, TAPE SPEED CONTROL)
Q 119, 120, 219, 220	**2SC3312STA**	Transistor (FILTER)
Q 303, 321	**2SA1309RTA**	Transistor (SWITCHING, MUTING)
Q 304	**2SC3312STA**	Transistor (MIC AMP)

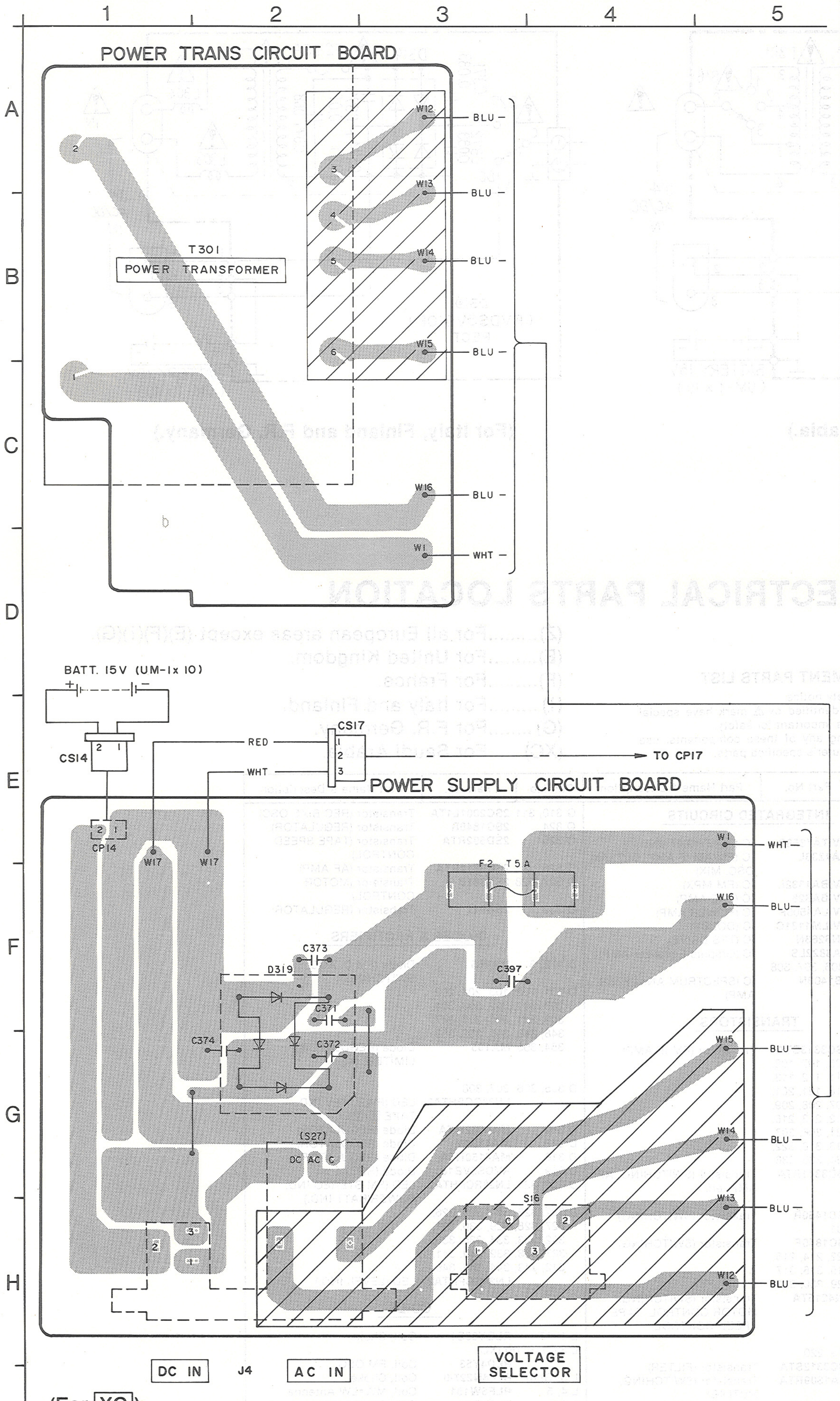
Ref. No.	Part No.	Part Name & Description
Q 310, 311	**2SC2001L1TA**	Transistor (REC BIAS OSC)
Q 324	**2SC1846R**	Transistor (REGULATOR)
Q 325	**2SD592RTA**	Transistor (TAPE SPEED CONTROL)
Q 326	**2SC3311RTA**	Transistor (AF AMP)
Q 327, 328	**2SK381B**	Transistor (MOTOR CONTROL)
Q 333	**2SB941**	Transistor (REGULATOR)
	DIODES & RECTIFIERS	
D 1, 2, 3	**MA165**	Diode (FM D. AGC, SWITCHING)
D 101, 102, 103, 201, 202, 203, 301, 302, 303, 304, 309, 311, 315, 317, 347, 348, 349, 351, 352, 353, 354, 355	**MA165**	Diode (REGULATOR, LIMITER, etc.)
D 305, 306, 307, 308	**LN38GCPHTA2**	LED (FWD, REV IND. TAPE 1/2)
D 312	**MA4062MTA**	Diode (REGULATOR)
D 313	**MA4100M**	Diode (REGULATOR)
D 318	**MA4150HTA**	Diode (REGULATOR)
D 319	**RVDS5VB10**	Diode (RECT.)
D 320, 321	**LN28RCPHTA2**	LED (FM STEREO IND. POWER/BATT IND.)
D 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346	**LN38GCPHTA2**	LED (LEVEL IND.)
	COILS	
L 1, 12	**RLQY30S1**	Coil, Choke
L 3 (Z) (E) (F) (XC)	**RLD4Y53**	Coil, FM OSC
L 3 (G) (I)	**RL04N227-0**	Coil, Choke
L 4, 5	**RLF6W151**	Coil, MW•LW Antenna
L 6	**RLA3B41**	Coil, SW Antenna

Ref. No.	Part No.	Part Name & Description
L 7	**RL01B12**	Coil, LW OSC
L 8	**RL02B108**	Coil, MW OSC
L 9	**RL03B87**	Coil, SW OSC
L 10, 11	**RLE5031**	Coil, Filter
L 13, 14	**RLQY11G4**	Coil, Choke
L 101, 201	**RLQZM473J**	Coil, Choke
L 102, 202	**RLE9B2**	Coil, Choke
L 103, 203	**RLQZB822K**	Coil, Choke
L 301	**RL08C4**	Coil, Bias OSC
L 302	**RLQZB470K**	Coil, Choke
L 303, 304 (I) (G)	**RLQZV470KT-D**	Coil, Choke ⚠
	TRANSFORMERS	
T 1, 3	**RLi4B153**	IFT, FM 1st, 2nd
T 2	**RLi2B153**	IFT, AM
T 301 (Z) (F) (I) (G)	**RLT5M5G2A-X**	Power Transformer ⚠
T 301 (E)	**RLT5M5A2A-X**	Power Transformer ⚠
T 301 (XC)	**RLT5M5G1A-X**	Power Transformer ⚠
	VARIABLE CAPACITORS	
VC 1, 2, 3, 4 (CT1, 2, 4, 7)	**RCV4RC2RA**	Variable Capacitor/with Trimmer Capacitor
VC 5	**RCVMH60C8**	Fine Tuning
	TRIMMER CONDENSERS	
CT 3, 6	**RCVTZ20F**	Trimmer Capacitor
CT 8	**RCV10AF1**	Trimmer Capacitor
CT 9 (G) (I)	**RCVCTZ53C117**	Trimmer Capacitor
	VARIABLE RESISTORS	
VR 1	**EVND4AA00B14**	FM VCO Adjustment VR
VR 101, 102, 201, 202, 301, 304, 306	**EVND1AA00B14**	Playback Gain, Rec Bias, Tape Speed (High Speed) Adjustment VR
VR 103, 203	**EVND1AA00B15**	R/P Gain Adjustment VR
VR 104, 204	**EWATF2T50B54**	Volume Control VR
VR 105, 106, 107, 108, 109, 110, 111, 205, 206, 207, 208, 209, 210, 211	**EWATA6C95G54**	Graphic Equalizer Control VR
VR 302	**EWATL2C95A14**	Mixing Level Control VR
VR 303	**EWATJ2C95G15**	Balance Control VR
VR 305, 307	**EVND1AA00B24**	Tape Speed (Normal Speed) Adjustment VR

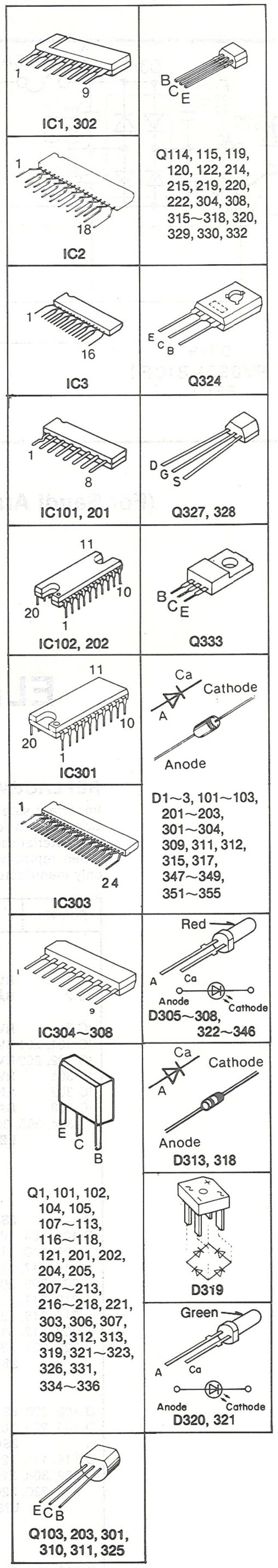
Ref. No.	Part No.	Part Name & Description
	CERAMIC FILTERS	
CF 1	**RVF107WDZ**	Ceramic Filter (10.7 MHz)
CF 2 (Z) (F) (I) (G) (XC)	**RVFSFZ455JZ**	Ceramic Filter (455 kHz)
CF 2 (E)	**RVFSFZ470JL**	Ceramic Filter (470 kHz)
	THERMISTOR	
TH 1	**RRT202**	Thermistor
	FILTER	
Z 1	**RXABPMB6AW**	Component Combinations
	FUSES	
F 1	**XBA2C10RB0U**	Fuse (1 A) ⚠
F 2	**XBA2C50TB0U**	Fuse (5 A) ⚠
F 3	**XBA2C05TB0U**	Fuse (0.5 A) ⚠
	SWITCHES	
S 1, 2, 3, 4, 29	**ESB621626**	Push Switch (Band Select) (Tuner Circuit Board)
S 5	**ESB6488**	Push Switch (FM Mode) (G. Equalizer Circuit Board)
S 6, 7, 8, 9, 17	**ESB621625**	Push Switch, Equalizer Mode/Function
S 10, 11	**RSS2B57Z**	Slide Switch, Tape Selector TAPE 1, TAPE 2
S 12, 13	**ESB6488**	Push Switch, Relay Play, Dolby NR
S 14	**RSS3B38Z**	Slide Switch, Editing Mode
S 15	**RSH2B37Z**	Push Switch, Power ⚠
S 16	**RSR3A01Y**	Rotary Switch, Voltage Selector ⚠
S 18	**Refer to M109**	Switch, Direction (TAPE 1)
S 19	**Refer to M109**	Switch, Direction (TAPE 2)
S 20, 22	**RFA75ZA**	Switch, Playback, Motor (TAPE 2)
S 21	**RFA52Z**	Switch, FF/REW (TAPE 2)
S 23, 24	**RFA75ZA**	Switch, Playback, Motor (TAPE 1)
S 25	**RFA52Z**	Switch, FF/REW (TAPE 1)
S 26	**RSH1A68ZA-U**	Push Switch, Record (TAPE 1)
S 28	**RSS3B38YA-Q**	Slide Switch, Beat Proof
	JACKS	
J 1	**RJF1099Z**	Jack, CD/LINE IN
J 2	**RJF1098Y**	Terminal, EXT Speaker
J 3	**RJJ1D25Z**	Jack, Mixing Microphone
J 4 (S27) (Z) (F) (I) (G) (XC)	**RJJ1F2ZC-H**	Jack, AC/DC IN ⚠
J 4 (S27) (E)	**RJJ1F3Z**	Jack, AC/DC IN ⚠
J 5	**RJJ1D27Z**	Jack, Headphones
J 6 (Z) (E) (F) (XC)	**RJF1095Z**	Terminal, EXT Antenna


1
2
3
4
5
6
A
B
C
D
E
F
G
H
BAND
TUNER CIRCUIT BOARD
IC2
RUP2184XAN
TELESCOPIC ANTENNA
S4-1
S4-3
S4-2
S4-4
S3-1
S3-3
S3-2
S3-4
S2-1
S2-3
S2-2
S2-4
S1-1
S1-2
S5
L6
L5
L4
L12
L8
L9
L2
L3
L10
T1
T2
T3
CF
CF1
CF2
CT1
CT2
CT3
CT4
CT5
CT6
CT7
CT9
VC1
VC2
VC3
VC4
VR1
Z1
D1
D2
D3
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R30
R32
R33
R34
C2
C3
C4
C5
C6
C7
C8
C9
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28
C29
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C45
C46
C51
C55
C56
C57
CS2
CS5
TO CP2
TO CP5
IC 1
Q1
IC 3
BATT. 15V (UM-1x 10)
CS14
CS17
RED
WHT
TO CP17
POWER SUPPLY CIRCUIT BOARD
TO POWER TRANSFORMER
CP14
W17
W1
W16
W15
W12
WHT
BLU
F2 T5A
C373
D319
C371
C372
C374
C397
L304
L303
(S27)
DC
AC
C
DC IN
J4
AC IN

(For I G)


1
2
3
4
5
A
B
C
D
E
F
G
H
POWER TRANS CIRCUIT BOARD
T301
POWER TRANSFORMER
W12
W13
W14
W15
W16
W1
BLU
WHT
BATT. 15V (UM-1x 10)
CS14
CS17
RED
WHT
TO CP17
POWER SUPPLY CIRCUIT BOARD
CP14
W17
F2 T5A
C373
D319
C371
C372
C374
C397
(S27)
DC
AC
C
S16
DC IN
J4
AC IN
VOLTAGE SELECTOR

(For XC)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9
IC1, 302
B
C
E
Q114, 115, 119, 120, 122, 214, 215, 219, 220, 222, 304, 308, 315~318, 320, 329, 330, 332
1
18
IC2
1
16
IC3
E
C
B
Q324
1
8
IC101, 201
D
G
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Q327, 328
11
10
20
1
IC102, 202
B
C
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Q333
11
10
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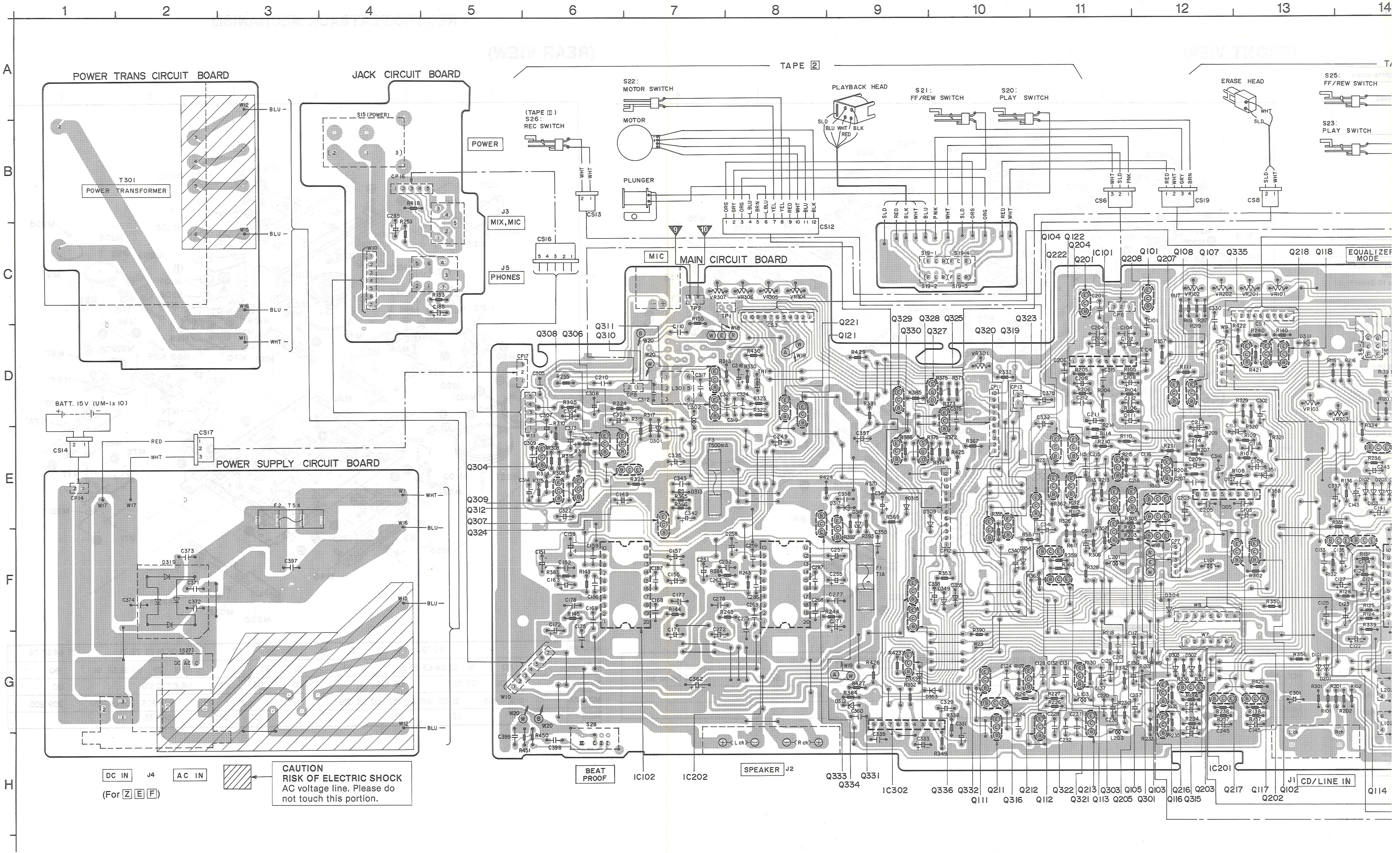
1
IC301
Ca
Cathode
A
Anode
D1~3, 101~103, 201~203, 301~304, 309, 311, 312, 315, 317, 347~349, 351~355
1
24
IC303
1
9
IC304~308
Red
A
Ca
Anode
Cathode
D305~308, 322~346
E
C
B
Q1, 101, 102, 104, 105, 107~113, 116~118, 121, 201, 202, 204, 205, 207~213, 216~218, 221, 303, 306, 307, 309, 312, 313, 319, 321~323, 326, 331, 334~336
Ca
Cathode
A
Anode
D313, 318
D319
Green
A
Ca
Anode
Cathode
D320, 321
E
C
B
Q103, 203, 301, 310, 311, 325

CIRCUIT BOARD AND WIRING CONN



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POWER TRANS CIRCUIT BOARD
T301
POWER TRANSFORMER
W12
W15
W16
W1
BLU
WHT
JACK CIRCUIT BOARD
S15 (POWER)
POWER
J3
MIX, MIC
J5
PHONES
CS16
BATT. 15V (UM-1x 10)
CS14
CS17
RED
WHT
POWER SUPPLY CIRCUIT BOARD
CP14
F2 T5A
D319
(S27)
DC AC
DC IN
J4
AC IN
(For Z E F)
CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not touch this portion.
TAPE 2
(TAPE 1) S26: REC SWITCH
S22: MOTOR SWITCH
MOTOR
PLUNGER
PLAYBACK HEAD
S21: FF/REW SWITCH
S20: PLAY SWITCH
ERASE HEAD
S25: FF/REW SWITCH
S23: PLAY SWITCH
CS13
CS12
CS6
CS19
CS8
S19-1
S19-4
S19-2
S19-3
MIC
MAIN CIRCUIT BOARD
TP1
TP2
F3 T500mA
F1 T1A
BEAT PROOF
S28
SPEAKER
J2
L ch
R ch
J1
CD/LINE IN
EQUALIZER MODE
IC101
IC102
IC201
IC202
IC302
Q101
Q102
Q103
Q104
Q105
Q107
Q108
Q111
Q112
Q113
Q114
Q116
Q117
Q118
Q121
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Q327
Q328
Q329
Q330
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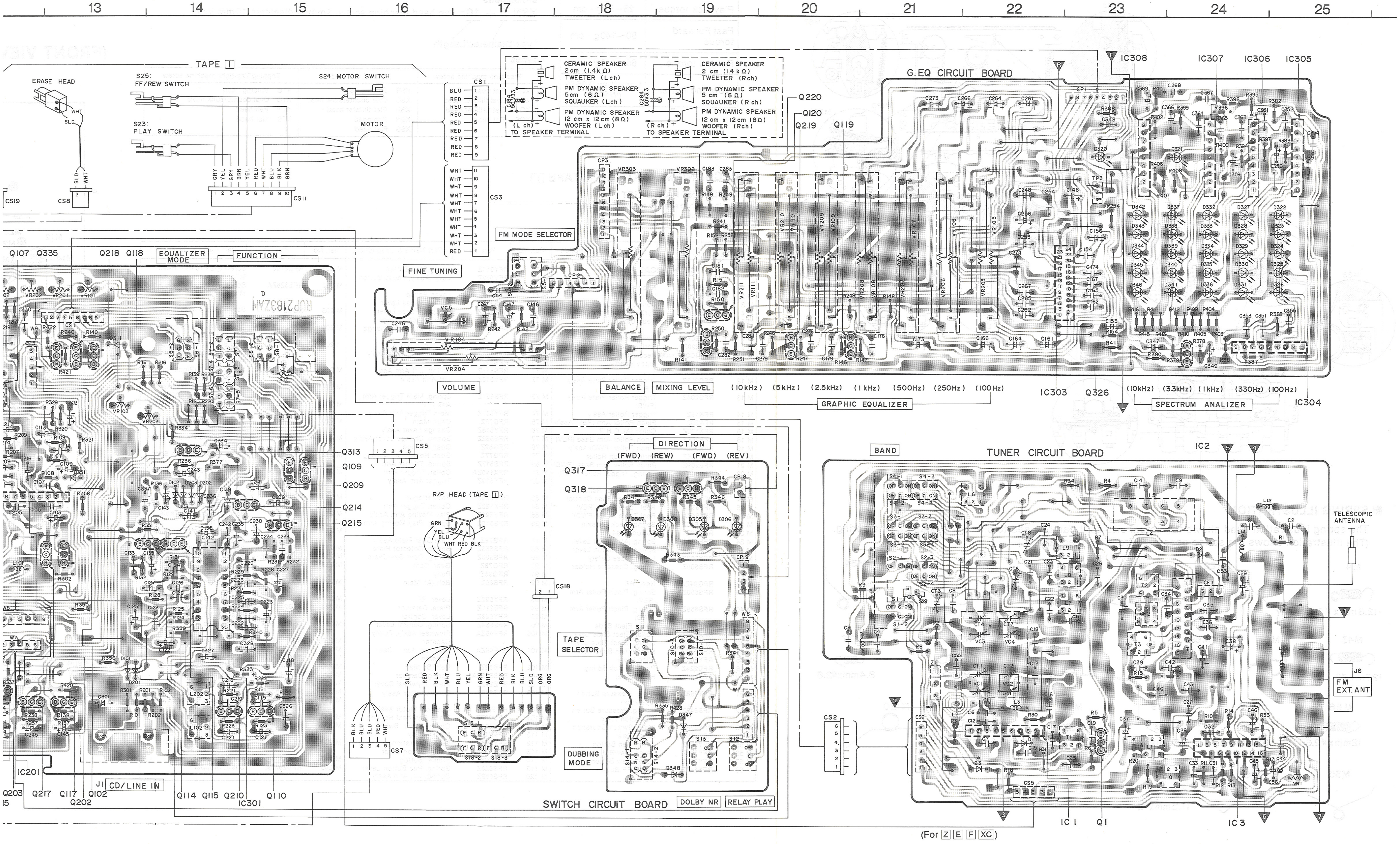
Q333
Q334
Q335
Q336
VR101
VR102
VR103
VR201
VR202
VR203
VR301
VR304
VR305
VR306
VR307

ꞁND WIRING CONNECTION DIAGRAM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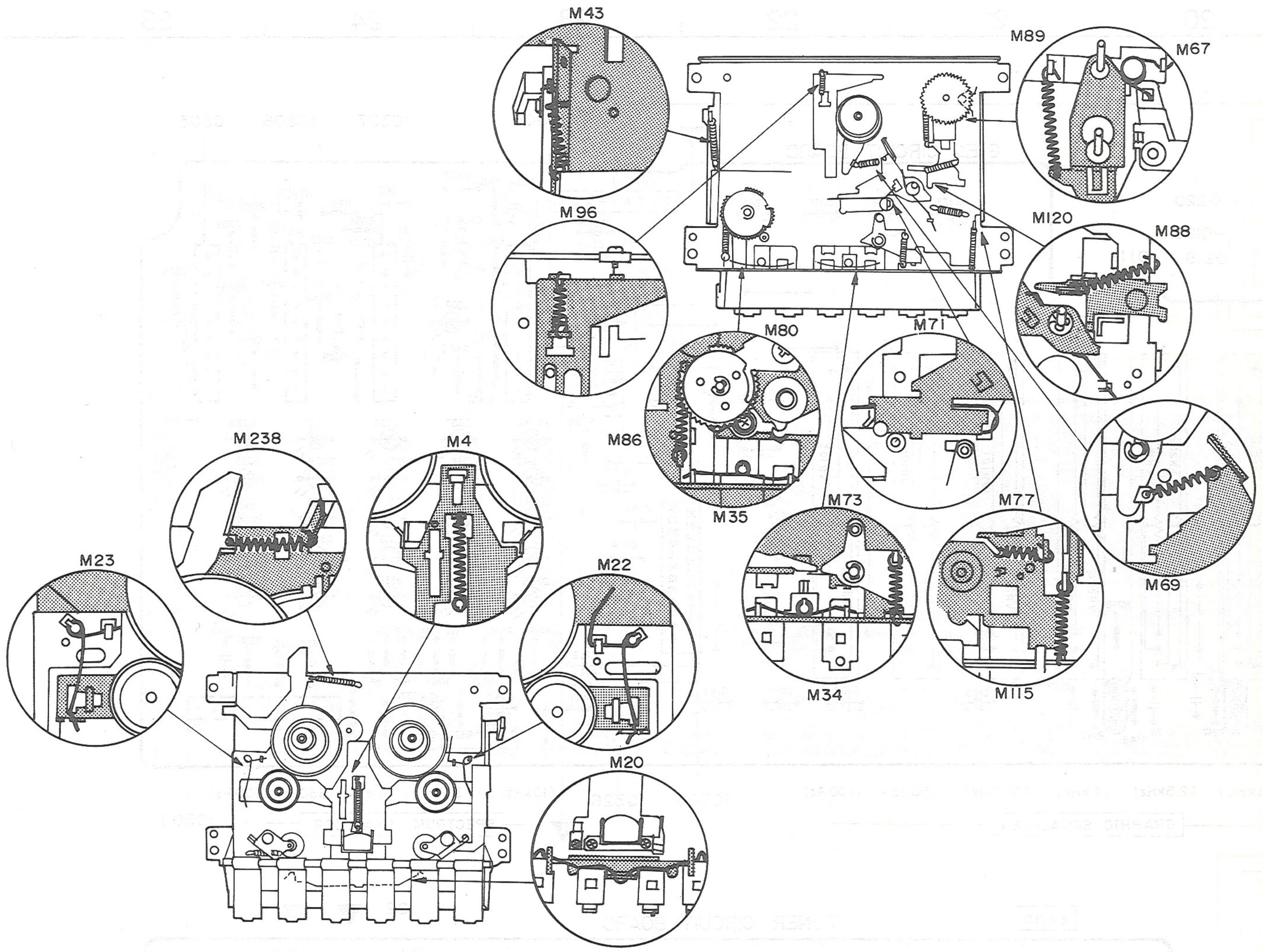
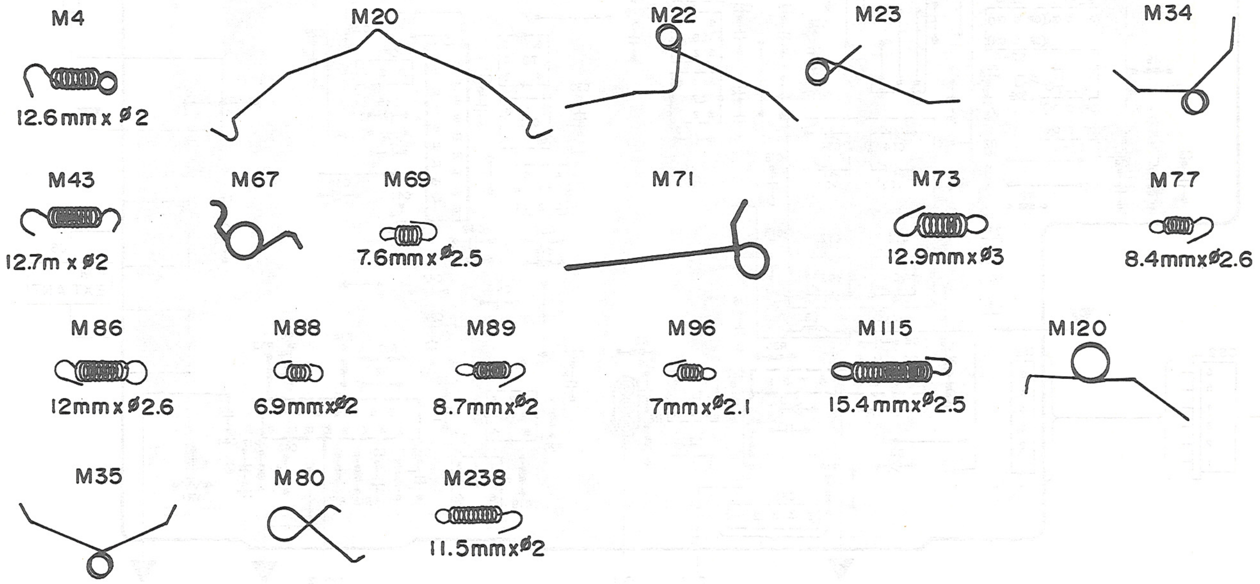
TAPE 1
ERASE HEAD
S25: FF/REW SWITCH
S24: MOTOR SWITCH
S23: PLAY SWITCH
MOTOR
CS1
CS3
CS8
CS11
CS19
CERAMIC SPEAKER 2 cm (1.4kΩ) TWEETER (Lch)
PM DYNAMIC SPEAKER 5cm (6Ω) SQUAUKER (Lch)
PM DYNAMIC SPEAKER 12 cm x 12cm (8Ω) WOOFER (Lch)
CERAMIC SPEAKER 2 cm (1.4kΩ) TWEETER (Rch)
PM DYNAMIC SPEAKER 5 cm (6Ω) SQUAUKER (R ch)
PM DYNAMIC SPEAKER 12 cm x 12cm (8Ω) WOOFER (Rch)
(L ch) TO SPEAKER TERMINAL
(R ch) TO SPEAKER TERMINAL
FM MODE SELECTOR
FINE TUNING
VOLUME
BALANCE
MIXING LEVEL
EQUALIZER MODE
FUNCTION
RUP2183ZAN
G.EQ CIRCUIT BOARD
IC308
IC307
IC306
IC305
IC303
IC304
Q326
Q220
Q120
Q219
Q119
(10kHz) (5kHz) (2.5kHz) (1kHz) (500Hz) (250Hz) (100Hz)
GRAPHIC EQUALIZER
(10kHz) (3.3kHz) (1kHz) (330Hz) (100Hz)
SPECTRUM ANALIZER
Q107
Q335
Q218
Q118
Q313
Q109
Q209
Q214
Q215
CS5
R/P HEAD (TAPE 1)
CS18
CS7
DIRECTION
(FWD) (REW) (FWD) (REV)
Q317
Q318
TAPE SELECTOR
DUBBING MODE
SWITCH CIRCUIT BOARD
DOLBY NR
RELAY PLAY
IC201
J1 CD/LINE IN
Q203
Q217
Q117
Q102
Q202
Q114
Q115
Q210
IC301
Q110
BAND
TUNER CIRCUIT BOARD
IC2
TELESCOPIC ANTENNA
J6
FM EXT. ANT
CS2
CS5
IC1
Q1
IC3
(For Z E F XC)

SPRING PARTS LOCATION



■ SPRING ILLUSTRATION

The spring illustration used shows the actual size so it can be used to check the shape of the spring. (The illustration shows the spring separated from the mechanism.)



Specifications

Playback torque	25~55g · cm
Fast Forward torque	80~140g · cm
Rewind torque	80~140g · cm
Wow and flutter	Less than 0.35% (WRMS)

Screw Dimensions Quick Reference

- **Dimensions**

$\underline{\text{XSN}}\ \underline{3} + \underline{10}$ = Pan head machine screw, 3mm in diameter, 10mm long.

Type/Diameter/Length

- **Types**

Precision machine screw	Machine screw	Tapping/Tap-tight machine screw
XQC Flat head	XSB Binding head	XTB Binding head
XQG Oval fillister head	XSC Oval countersunk head	XTC Oval countersunk head
XQH Flat fillister head	XSH Flat fillister head	XTN Pan head
XQS Flat head	XSN Pan head	XTS Flat head
	XSS Flat head	

■ MECHANISM PARTS LIST (TAPE 1)

REPLACEMENT PARTS LIST

The letter in the circle after the part name indicates the color of the part.

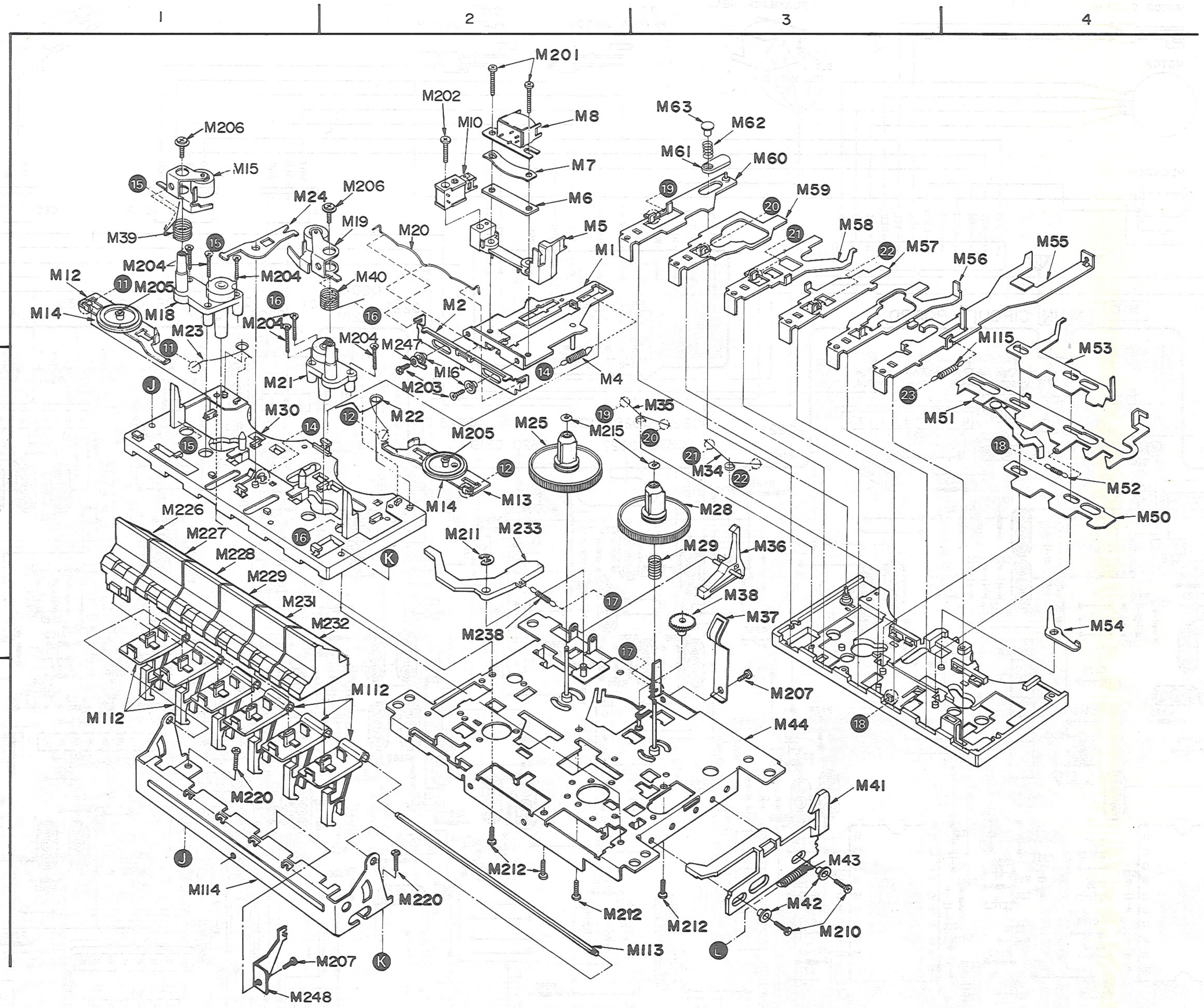
Ⓢ... Silver

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M 1	RFU56Z	Head Panel Ass'y
M 2	RFY725ZA	Lever, C.H.P.
M 3	RFX128Z	Collar, Slide Lever
M 4	RFS525Z	Spring, Head Panel
M 5	RFU57Z	Head Base
M 6	RFE207Z	Head Plate
M 7	RFS498Z	Spring Plate, Head
M 8	RJH4C06GYAM	Record/Playback Head
M 10	RJH2C05YZAM	Erase Head
M 12	RFD203Z	Trigger Roller Plate Ass'y (REV)
M 13	RFD204Z	Trigger Roller Plate Ass'y (FWD)
M 14	RFK15Z	Trigger Roller Ass'y
M 15	RFR33Z	Pinch Roller Arm (REV) Ass'y
M 16	RFX129Z	Collar (A), C.H.P.
M 18	RFE208Z	Pinch Roller Arm Base (REV)
M 19	RFR32Z	Pinch Roller (FWD) Ass'y
M 20	RFS545Z	Spring, Pinch Roller
M 21	RFE209Z	Pinch Roller Arm Base (FWD)
M 22	RFS656ZA	Spring, Trigger Roller (FWD)
M 23	RFS502Z	Spring, Trigger Roller (REV)
M 24	RFY502Z	Lever, Head Base Control
M 25	RFJ63ZA	Reel Table Ass'y (REV)
M 28	RFJ64ZA	Reel Table Ass'y (FWD)
M 29	RFS546Z	Spring, Back Tension
M 30	RFU58Z	Button Base
M 34	RFS547Z	Spring (A), Button Lever
M 35	RFS508Z	Spring (B), Button Lever
M 36	RFY503Z	Lever, Erase Safety
M 37	RFS509Z	Spring, Cassette Holder
M 38	RFG94ZA	Gear, FF
M 39	RFS650ZA	Spring, Pinch Roller Arm (REV)
M 40	RFS658ZA	Spring, Pinch Roller Arm (FWD)
M 41	RFY722Z	Lever, Eject Slide
M 42	RFX120Z	Collar, Eject Slide Lever
M 43	RFS659ZA	Spring, Eject Slide Lever
M 44	RFU98ZA	Mechanism Base Ass'y
M 45	RFY505Z	Slide Lever
M 46	RFD224Z	Plate, Switch Spring
M 50	RFX146ZA	RC Stopper
M 51	RFY558Z	Plate, Pressure Button Operation
M 52	RFS549Z	Spring, Pressure Button Operation Plate
M 53	RFY526Z	Plate, Switch Operation
M 54	RFY559Z	Lever, Rew
M 55	RFY507Z	Lever, Rec Button
M 56	RFY508Z	Lever, Play Button
M 57	RFY509Z	Lever, Rew Button
M 58	RFY510Z	Lever, FF Button
M 59	RFY511Z	Lever, Stop Button
M 60	RFY512Z	Lever Ass'y, Pause Button
M 61	RFY513Z	Lever, Pause
M 62	RFS512Z	Spring, Pause Lever
M 63	RFX122Z	Stopper, Pause Lever
M 64	RFY514Z	Lever, Mode Change
M 67	RFS526Z	Spring (B), Mode Change Lever
M 68	RFK16Z	RF Clutch Ass'y
M 69	RFS660ZA	Spring, RF Clutch Ass'y
M 70	RFB59Z	Belt, FF
M 71	RFS514Z	Spring, Lift Arm Ass'y
M 72	RFY516Z	Lift Arm Ass'y
M 73	RFS551Z	Spring, Main Trigger Arm Ass'y
M 74	RFY517Z	Main Trigger Arm Ass'y
M 75	RFG75Z	Gear, Main
M 76	RFY518Z	Change Lever Ass'y
M 77	RFS552Z	Spring, Change Lever Ass'y
M 78	RFG82Z	Gear, Change
M 79	RFG77Z	Gear, Head Plate Moving
M 80	RFS517Z	Spring, Trigger Arm
M 81	RFX148ZA	Collar, Trigger Arm
M 82	RFY519Z	Trigger Arm Ass'y
M 83	RFY520Z	Arm, Trigger
M 84	RFX123Z	Collar, Trigger Arm
M 85	RFY521Z	Play Moving Arm Ass'y
M 86	RFS518Z	Spring, Play Moving Arm Ass'y
M 87	RFG79Z	Cam Gear Plate Ass'y
M 88	RFS553Z	Spring, Detector Plate
M 89	RFS520Z	Spring, Cam Gear Plate
M 90	RFG78Z	Gear, Cam
M 91	RFQ35Z	Pully
M 92	RFB60Z	Belt (A), Main
M 93	RFY522Z	Lever, RF
M 94	RFE211Z	Plate, Detector
M 95	RFY523Z	Lever, Control
M 96	RFS554Z	Spring, Control Lever
M 100	RFF45ZA	Flywheel Ass'y, Pulley Capstan
M 101	RFF46ZA	Flywheel Ass'y, Gear Capstan
M 102	RFB52Z	Belt (B), Main
M 104	RFS522ZA	Spring, Damper
M 105	RFE212Z	Plate, Flywheel Cover
M 106	RFE213Z	Screw, Motor Ass'y
M 107	RFi32Z	Cushion, Motor Ass'y
M 108	RFD207Z	Plate, Flywheel Holding
M 109	RFU101ZA	Circuit Board, Switch
M 110	RFM100ZA	Motor Ass'y
M 112	RFY524Z	Lever, Operation
M 113	RFY726ZA	Shaft, Button Lever
M 114	RFD206Z	Frame, Button
M 115	RFS523Z	Spring, Rec Button Lever
M 120	RFS582Z	Spring, Lift Arm Ass'y
M 201	RFE214Z	Screw ⊕2×10 (R/P Head M'tg) (Azimuth)
M 202	RFE326ZA	Screw ⊕2.6×10 (Erase Head M'tg)
M 203	XQC2+3	Screw ⊕2×3 (C.H.P. Lever M'tg)
M 204	RFE215Z	Screw ⊕2×8.5 (Pinch Roller Arm Base M'tg)
M 205	RFE216Z	Poly Slider Washer ϕ1.2 (Trigger Roller Plate, etc. M'tg)
M 206	RFE327ZA	Screw ⊕2×6 (Pinch Roller Arm M'tg)
M 207	XSN2+3	Screw ⊕2×3 (Cassette Holder Spring etc, M'tg)
M 209	RFN152Z	Washer ϕ2.1, Detector Plate, etc. M'tg
M 210	RFE221Z	Screw ⊕2×5 (Eject Slide Lever M'tg)
M 211	XUC25FT	E Ring (Head Plate Moving Gear etc, M'tg)
M 212	RFE222Z	Screw ⊕2×6 (Button Base etc. M'tg)
M 213	RFE329ZA	Screw ⊕2×3 (Slide Lever Shassis etc, M'tg)
M 214	RFE324Z	Screw ⊕2×1.5 (Switch Spring Plate M'tg)
M 215	RFE133Z	Poly Washer (Reel Table Ass'y M'tg)
M 216	XQN2+35	Screw ⊕2×3.5 (Trigger Arm M'tg)
M 217	RFE332ZA	Screw (RF Lever, etc. M'tg)
M 218	RFE330ZA	E Ring (Change Gear M'tg)
M 219	XSN2+3	Screw ⊕2×3 (Switch Circuit Board M'tg)
M 220	XQN2+7	Screw ⊕2×7 (Button Frame M'tg)
M 221	RFE218Z	Poly Washer (Flywheel)
M 224	XTB2+3	Screw ⊕2×3 (Switch Circuit Board M'tg)
M 226	RBC1015ZA	Button, Rec
M 227	RBC1016ZA	Button, Play
M 228	RBC1017ZA	Button, Rew
M 229	RBC1018ZA	Button, FF
M 230	RFY527Z	Lever (B), Change
M 231	RBC1019ZA	Button, Stop/Eject
M 232	RBC1020ZA	Button, Pause
M 233	RFY528Z	Lever (A), Change
M 234	XYN2+C4	Screw ⊕2×4 (Change Lever (B) M'tg)
M 235	RFX147ZA	Collar, Change Lever (B)
M 238	RFS661ZA	Spring, Cam Gear Plate
M 239	XYN2+C3	Screw ⊕2×3 (Flywheel Holding Plate M'tg)
M 247	RFS559Z	Spring, Dumper
M 248	RFD297ZA	Shaft, Stopper

MECHANISM PARTS LOCATION (TAPE 1)

• RECORD/PLAYBACK MECHANISM

(FRONT VIEW)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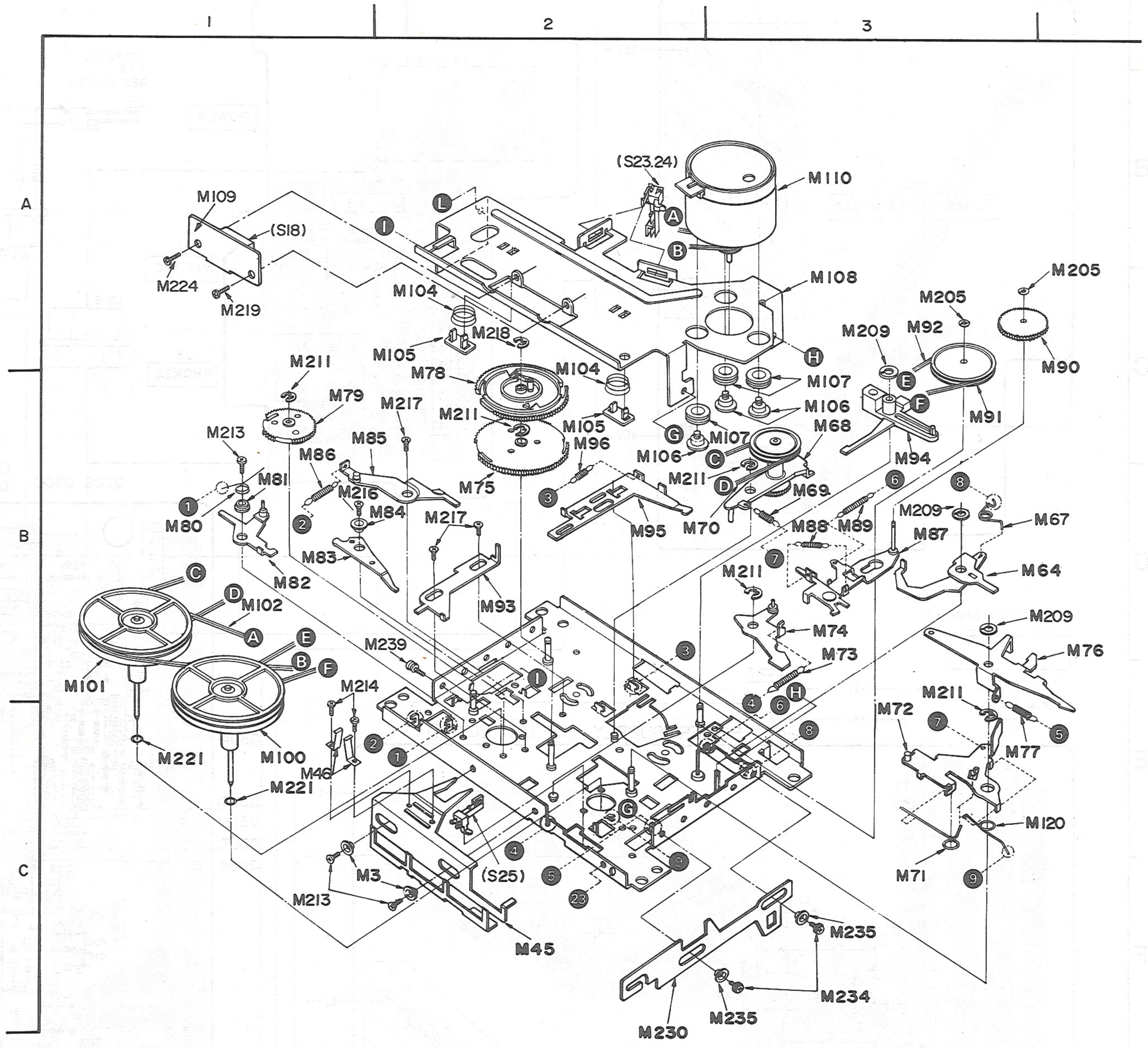
M1 ~ 49	14 12 39 18 23 15 21 30 24 19 40 20 22 14 16 2 10 13 25 6 7 8 5 1 4 35 29 34 28 38 37 36 44 42 43 41
M50~199	112 114 112 113 61 63 62 60 59 58 57 51 56 115 55 53 54 52 50
M200~215	204 205 206 204 207 206 204 203 202 211 205 212 201 215 212 212 207 210
M216~	226 227 228 220 229 231 232 248 247 220 238 233

(REAR VIEW)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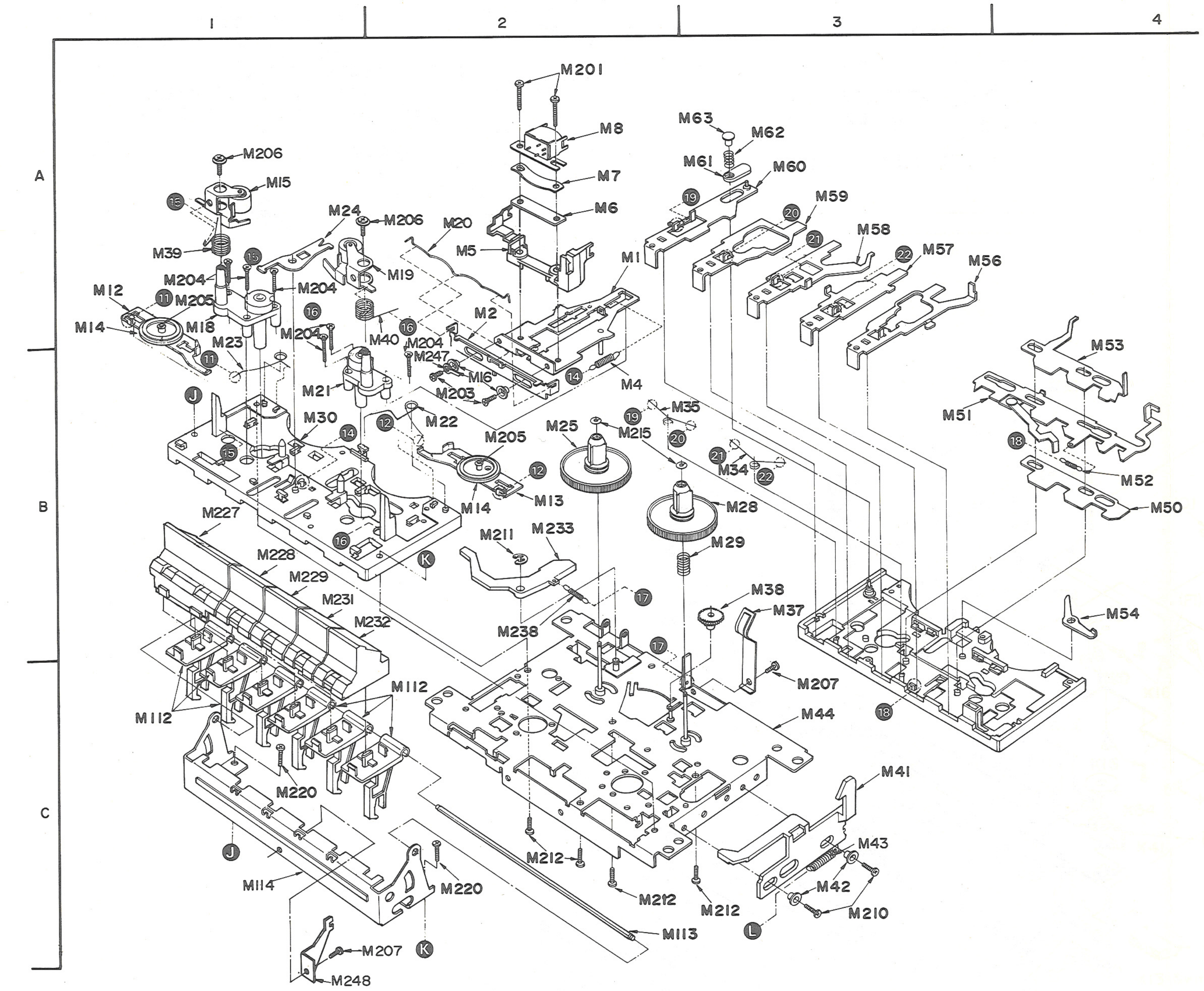
M80~99	80 81 82 86 83 85 84 93 96 95 88 89 94 92 87 91 90
M100~199	101 109 102 100 105 104 104 105 106 107 106 107 110 108 120
M200~220	219 213 211 213 216 214 217 217 211 218 211 211 209 209 211 205 209 205
M221~	224 221 221 239 230 235 234 235

MECHANISM PARTS LOCATION (TAPE 2)

• PLAYBACK MECHANISM

(FRONT VIEW)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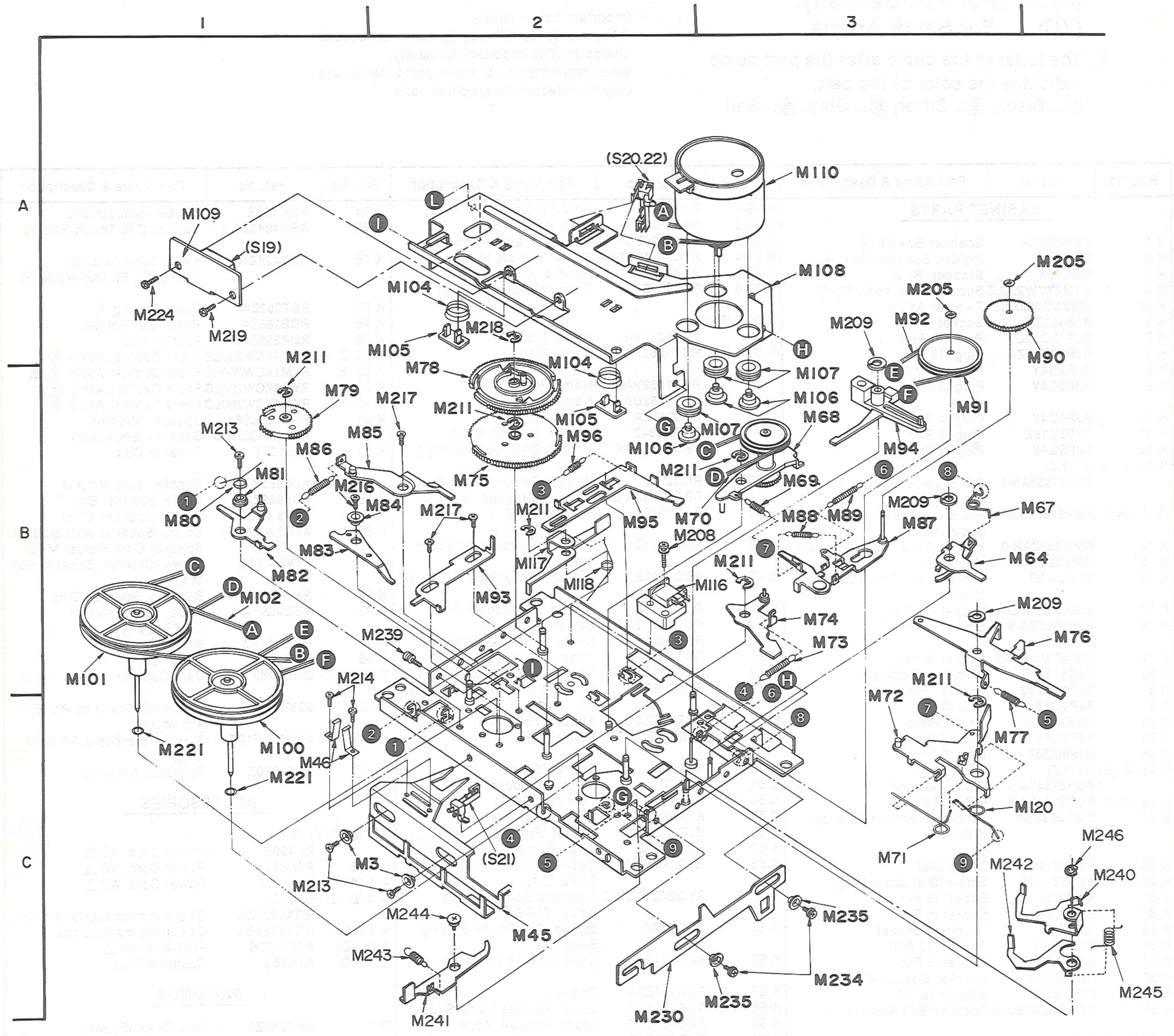
(REAR VIEW)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M50 ~ 199	112 114 112 113 61 63 62 60 59 58 57 51 56 53 54 52 50
M200-215	204 205 206 204 207 206 204 203 211 205 212 201 215 212 207 210
M216 ~	227 228 220 229 231 232 248 247 220 238 233 221

M1 ~ 79	46 79 3 78 75 45 70 69 68 74 73 72 71 77 64 67 76
M80 ~ 99	80 81 82 86 83 84 93 96 95 88 89 94 92 87 91 90
M100 ~ 199	101 109 102 100 105 104 117 104 105 118 106 116 107 106 107 110 108 120
M200-220	219 213 211 213 216 214 217 211 218 211 211 208 211 209 209 211 205 209 205
M221 ~	224 221 221 243 239 244 241 230 235 234 235 242 246 240 245

■ MECHANISM PARTS LIST (TAPE 2)

REPLACEMENT PARTS LIST

The letter in the circle after the part name indicates the color of the part.
Ⓢ... Silver

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M 1	RFU56Z	Head Panel Ass'y
M 2	RFY725ZA	Lever, C.H.P.
M 3	RFX128Z	Collar, Slide Lever
M 4	RFS525Z	Spring, Head Panel
M 5	RFU57Z	Head Base
M 6	RFE207Z	Head Plate
M 7	RFS498Z	Spring Plate, Head
M 8	RJH4C06GZAM	Playback Head
M 12	RFD203Z	Trigger Roller Plate Ass'y (REV)
M 13	RFD204Z	Trigger Roller Plate Ass'y (FWD)
M 14	RFK15Z	Trigger Roller Ass'y
M 15	RFR33Z	Pinch Roller Arm (REV) Ass'y
M 16	RFX129Z	Collar (A), C.H.P.
M 18	RFE208Z	Pinch Roller Arm Base (REV)
M 19	RFR32Z	Pinch Roller Arm (FWD) Ass'y
M 20	RFS545Z	Spring, Pinch Roller
M 21	RFE209Z	Pinch Roller Arm Base (FWD)
M 22	RFS656ZA	Spring, Trigger Roller (FWD)
M 23	RFS502Z	Spring, Trigger Roller (REV)
M 24	RFY502Z	Lever, Head Base Control
M 25	RFJ63ZA	Reel Table Ass'y (REV)
M 28	RFJ64ZA	Reel Table Ass'y (FWD)
M 29	RFS546Z	Spring, Back Tension
M 30	RFU58Z	Button Base
M 34	RFS547Z	Spring (A), Button Lever
M 35	RFS508Z	Spring (B), Button Lever
M 37	RFS509Z	Spring, Cassette Holder
M 38	RFG94ZA	Gear, FF
M 39	RFS650ZA	Spring, Pinch Roller Arm (REV)
M 40	RFS658ZA	Spring, Pinch Roller Arm (FWD)
M 41	RFY722Z	Lever, Eject Slide
M 42	RFX120Z	Collar, Eject Slide Lever
M 43	RFS659ZA	Spring, Eject Slide Lever
M 44	RFU99ZA	Mechanism Base Ass'y
M 45	RFY505Z	Slide Lever
M 46	RFD224Z	Plate, Switch Spring
M 50	RFX146ZA	RC Stopper
M 51	RFY558Z	Plate, Pressure Button Operation
M 52	RFS549Z	Spring, Pressure Button Operation Plate
M 53	RFY526Z	Plate, Switch Operation
M 54	RFY559Z	Lever, Rew
M 56	RFY508Z	Lever, Play Button
M 57	RFY509Z	Lever, Rew Button
M 58	RFY510Z	Lever, FF Button
M 59	RFY511Z	Lever, Stop Button
M 60	RFY512Z	Lever Ass'y, Pause Button
M 61	RFY513Z	Lever, Pause
M 62	RFS512Z	Spring, Pause Lever
M 63	RFX122Z	Stopper, Pause Lever
M 64	RFY727ZA	Lever, Mode Change
M 67	RFS526Z	Spring (B), Mode Change Lever
M 68	RFK16Z	RF Clutch Ass'y
M 69	RFS660ZA	Spring, RF Clutch Ass'y
M 70	RFB59Z	Belt, FF
M 71	RFS514Z	Spring, Lift Arm Ass'y
M 72	RFY516Z	Lift Arm Ass'y
M 73	RFS551Z	Spring, Main Trigger Arm Ass'y
M 74	RFY517Z	Main Trigger Arm Ass'y
M 75	RFG75Z	Gear, Main
M 76	RFY728ZA	Change Lever Ass'y
M 77	RFS552Z	Spring, Change Lever Ass'y
M 78	RFG82Z	Gear, Change
M 79	RFG77Z	Gear, Head Plate Moving
M 80	RFS517Z	Spring, Trigger Arm
M 81	RFX148ZA	Collar, Trigger Arm
M 82	RFY519Z	Trigger Arm Ass'y
M 83	RFY520Z	Arm, Trigger
M 84	RFX123Z	Collar, Trigger Arm
M 85	RFY521Z	Play Moving Arm Ass'y
M 86	RFS518Z	Spring, Play Moving Arm Ass'y
M 87	RFG95ZA	Cam Gear Plate Ass'y
M 88	RFS553Z	Spring, Detector Plate
M 89	RFS520Z	Spring, Cam Gear Plate
M 90	RFG78Z	Gear, Cam
M 91	RFQ35Z	Pully
M 92	RFB60Z	Belt (A), Main
M 93	RFY522Z	Lever, RF
M 94	RFE211Z	Plate, Detector
M 95	RFY523Z	Lever, Control
M 96	RFS554Z	Spring, Control Lever
M 100	RFF45ZA	Flywheel Ass'y, Pulley Capstan
M 101	RFF46ZA	Flywheel Ass'y, Gear Capstan
M 102	RFB52Z	Belt (B), Main
M 104	RFS522Z	Spring, Damper
M 105	RFE212Z	Plate, Flywheel Cover
M 106	RFE213Z	Screw, Motor Ass'y
M 107	RFi32Z	Cushion, Motor Ass'y
M 108	RFD207Z	Plate, Flywheel Holding
M 109	RFU102ZA	Circuit Board, Switch
M 110	RFM100ZA	Motor Ass'y
M 112	RFY524Z	Lever, Operation
M 113	RFY726ZA	Shaft, Button Lever
M 114	RFD206Z	Button Frame
M 116	RFP16ZA	Plunger Ass'y
M 117	RFY561Z	Lever, TPS
M 118	RFS557Z	Spring, TPS Lever
M 120	RFS582Z	Spring, Lift Arm Ass'y
M 201	RFE214Z	Screw ⊕2×10 (R/P Head M'tg) (Azimuth)
M 203	XQC2+3	Screw ⊕2×3 (C.H.P. Lever M'tg)
M 204	RFE215Z	Screw ⊕2×8.5 (Pinch Roller Arm Base M'tg)
M 205	RFE216Z	Poly Slider Washer ϕ1.2 (Trigger Roller Plate, etc. M'tg)
M 206	RFE327ZA	Screw ⊕2×6 (Pinch Roller Arm M'tg)
M 207	XSN2+3	Screw ⊕2×3 (Cassette Holder Spring etc, M'tg)
M 208	RFE328ZA	Screw ⊕2×8 (Plunger Ass'y M'tg)
M 209	RFN152Z	Washer ϕ2.1, Detector Plate, etc. M'tg)
M 210	RFE221Z	Screw ⊕2×5 (Eject Slide Lever M'tg)
M 211	XUC25FT	E Ring (Head Plate Moving Gear etc, M'tg)
M 212	RFE222Z	Screw ⊕2×6 (Button Base etc. M'tg)
M 213	RFE329ZA	Screw ⊕2×3 (Slide Lever Shassis etc, M'tg)
M 214	RFE324Z	Screw ⊕2×1.5 (Switch Spring Plate M'tg)
M 215	RFE133Z	Poly Washer (Reel Table Ass'y M'tg)
M 216	XQN2+35	Screw ⊕2×3.5 (Trigger Arm M'tg)
M 217	RFE332ZA	Screw (RF Lever, etc. M'tg)
M 218	RFE330ZA	E Ring (Change Gear M'tg)
M 219	XSN2+3	Screw ⊕2×3 (Switch Circuit Board M'tg)
M 220	XQN2+7	Screw ⊕2×7 (Button Frame M'tg)
M 221	RFE218Z	Poly Washer (Flywheel)
M 224	XTB2+3	Screw ⊕2×3 (Switch Circuit Board M'tg)
M 227	RBC1021ZA	Button, Play
M 228	RBC1017ZA	Button, Rew
M 229	RBC1018ZA	Button, FF
M 230	RFY527Z	Change Lever (B)
M 231	RBC1019ZA	Button, Stop/Eject
M 232	RBC1020ZA	Button, Pause
M 233	RFY528Z	Lever (A), Change
M 234	XYN2+C4	Screw ⊕2×4 (Change Lever (B) M'tg)
M 235	RFX147ZA	Collar
M 238	RFS661ZA	Spring, Cam Gear Plate
M 239	XYN2+C3	Screw ⊕2×3 (Flywheel Holding Plate M'tg)
M 240	RFY729ZA	Lever, Selector
M 241	RFY730ZA	Lever, Detector
M 242	RFY731ZA	Lever, Stop
M 243	RFS661ZA	Spring, Detector Lever
M 244	RFE332ZA	Screw (Detector Lever M'tg)
M 245	RFS662ZA	Spring, Selector Lever
M 246	RFE333ZA	E Ring (Selector Lever M'tg)
M 247	RFS559Z	Spring, Dumper
M 248	RFD297ZA	Shaft, Stopper

CAPACITORS & RESISTORS PARTS LIST

Numbering System of Resistor

Example:

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)
ERJ	**6G**	**C**	**J**	**2R2**
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage	Tolerance
ERD: Carbon Resistor ERC: Solid Resistor ERF: Incombustible Box-Shaped Wire-Wound Resistor ERG: Metal Oxide-Film Resistor ERM: Wire-Wound Resistor ERO: Superstable Metal Film Resistor ERX: Metal-Film Resistor RRJ:, ERJ: Chip Resistor	10 : 1/8W 25 : 1/4W 50 : 1/2W 18 : 1/8W 14 : 1/4W 12 : 1/2W 1 : 1W 2 : 2W 3 : 3W S1 : 1/2W S2 : 1/4W 6G : 1/10W 8G : 1/8W	F : ±1% G : ±2% J : ±5% K : ±10% H : ±20%

※ Capacity are in microtarads (µF) unless specified otherwise, P=Pico-farads.

※ Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage	Value (1000pF)	Tolerance	Peculiarity
ECEA	**50**	**M**	**R47**	
Type	Voltage	Peculiarity	Value (0.47µF)	

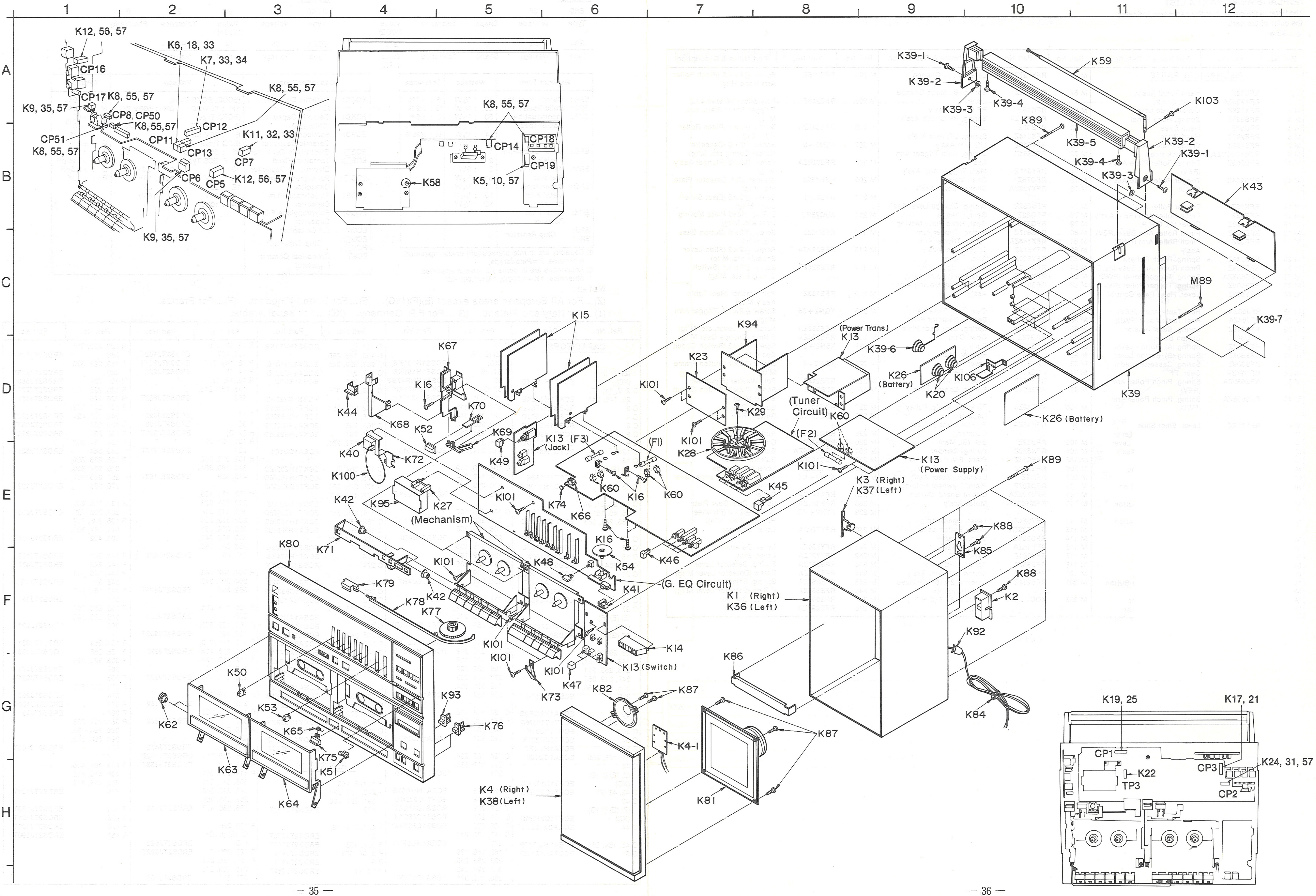
Capacitor Type	Voltage	Tolerance
ECCD: Ceramic Capacitor (Chitacon) ECKD: Ceramic Capacitor (Chitabari) ECFD: Semiconductor Ceramic Capacitor ECE□: Electrolytic Capacitor ECS□: Tantalum Fixed Electrolytic Capacitor ECQ□: Polystyrenc Film Capacitor ECQS: Polystyrene Film Capacitor ECQS: Polypropylene Film Capacitor ECQV: T.F Capacitor ECU□:, RCU□: Chip Capacitor ECBT: Cylindrical Ceramic Capacitor	(ECCD, ECKD Type) 1H : 50V DC 2H : 500V DC (ECFD Type) C : 12V DC D : 25V DC E : 50V DC (ECQ Type) 05 : 50WV DC 1 : 100WV DC (ECE, ECS Type) 0G : 4V 0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 1J : 63V 2A : 100V	K : ±10% M : ±20% Z : $^{+80}_{-20}$% J : ±5% G : ±2% F : ±1% C : ±0.25pF D : ±0.5pF F : ±1pF

Notes:

(Z)... For All European areas except (E)(F)(I)(G). (E)... For United Kingdom. (F)... For France.
(I)... For Itary and Finland. (G)... For F.R. Germany. (XC)... For Saudi Arabia.

Ref. No.	Part No.
CAPACITORS	
C 1 (Z) (E) (F) (XC)	ECKT1H102KB
C 2, 7, 11, 17, 25, 146, 246	ECKT1H102KB
C 3	RCBS1H270JL
C 4	RCBS1H120JC
C 6	RCBS1H200JC
C 8	ECCT1H390KC
C 9	ECCT1H070DC
C 12	RCBS1H3R9KC
C 13 (Z) (E) (F) (XC)	ECCT1H150K
C 13 (G) (I)	ECCD1H120KS
C 14, 26, 31, 34, 35, 40, 181, 183, 281, 283	ECFT1C223MD
C 15	ECCT1H180KC
C 16	RCBS1H470JL
C 18	ECCT1H150K
C 19, 354	RCBS1C822MY
C 21	RCBS1H6R8KC
C 22	ECQP2A221JZ
C 23	ECQP2A361JZ
C 24	ECQP2A392JZ
C 27 (Z) (E) (F) (XC)	ECFT1C223MD
C 27 (G) (I)	RCBS0J223NYY
C 28, 29, 33, 46, 148, 153, 161, 248, 253, 261, 347, 349, 355, 356, 359, 366, 369	ECEA1HU010
C 30	ECEA1HU2R2B
C 32, 39, 363	ECFT1C103MD
C 36	ECCT1H331K
C 37	ECEA0JU221B
C 38	ECEA1HU4R7
C 41, 156, 256	ECEA1CU100
C 42 (Z) (E) (I) (G) (XC)	ECFT1C103MD
C 42, 43 (F)	ECFT1C223MD
C 43 (Z) (E) (I) (G) (XC)	ECFT1C333MD
C 44	ECQP2A102JZT
C 45, 164, 264	ECEA1HUR47B
C 51	ECQP2A121JZT
C 53 (Z) (E) (F) (XC)	RCBS1H101KB
C 54, 55	RCBS1H101KB
C 56	ECEA1HNR47SB
C 57 (G) (I)	ECKT1H471KB
C 101, 201	RCBS1H331KB
C 102, 103, 118, 121, 136, 144, 149, 202, 203, 218, 221, 236, 244, 249, 307, 313, 314, 370	ECEA1HU010
C 104, 110, 119, 134, 142, 204, 210, 219, 234, 242	RCBS1H101KB
C 105, 106, 107, 205, 206, 207	RCBS1H471KB
C 108, 109, 208, 209, 308, 311	ECEA0JU470
C 111, 113, 135, 138, 139, 141, 211, 213, 235, 238, 239, 241, 338, 341	ECEA1EU4R7
C 112, 114, 115, 116, 133, 212, 214, 215, 216, 233, 358	ECFT1C333KDY
C 117, 217	RCBS1H821KB
C 120, 220, 309	RCBS1H102KB
C 122, 127, 137, 185, 222, 227, 237, 285, 322, 332, 333, 334, 336, 337	ECEA1AU221B
C 123, 143, 145, 151, 223, 243, 245, 251, 304, 329, 331	ECEA1HU0R1B
C 124, 126, 224, 226, 317, 330, 335	ECFT1C473KD
C 125, 225	ECEA1HUR33B
C 128, 228	ECFT1C223KD
C 129, 229	RCBS1C472KX
C 131, 231	RCBS1C682KX
C 132, 232	RCBS1C562KXY
C 147, 173, 247, 273	ECEA1HU0R1B
C 152, 168, 169, 252, 268, 269, 315, 324, 343, 350, 360, 375	RCBS1C103NY
C 154	RCBS1H471KB
C 155, 163, 255, 263, 302, 346	ECEA0JU101B
C 157, 257	ECEA0JU221B
C 158, 258	ECEA1EU221
C 159, 259, 319, 321	RCBS1C222MX
C 162, 262, 353	ECFT1C333MD
C 165, 265	ECFT1C153MD
C 166, 266	ECEA1HUR22B
C 167, 267	ECKT1H682MD
C 171, 172, 271, 272, 323	ECEA1CU101
C 174, 364	ECKT1H332MD
C 175, 275	ECKT1H103MD
C 176, 276, 352	ECFT1C473MD
C 177, 178, 277, 278	ECQV1H224JZ
C 179, 279, 361	ECKT1H222MD
C 182, 282	ECKT1H152MD
C 184, 284	ECEA1HN3R3S
C 186, 187, 286, 287	RCBS1H220JL
C 254	ECKT1H471KB
C 274	RCBS1C332KX
C 301	ECEA0JU102B
C 305	ECFT1C683MD
C 312	ECQP2A103JZ
C 316, 318, 325, 326	ECEA1AU101B
C 327	ECEA1AU102
C 328, 342	ECEA1CU100
C 340	ECEA0JU471
C 348	ECEA1AU471
C 351	ECQV1H154JZ
C 357	ECEA1CU471
C 362	ECEA1EU472
C 365 368	ECKT1H681KB
C 367	ECCT1H221K
C 371, 372, 373, 374	ECKT1H333ZF
C 397	ECQV1H684JZ3
C 398	ECQP2A152JZ
C 399	ECQP2A392JZ
RESISTORS	
R 1, 146, 150, 246, 250, 387, 391, 397, 400, 402	ERDS2TJ104T
R 2, 4, 7, 9, 18, 31	ERDS2TJ470T
R 3, 8, 408	ERDS2TJ101T
R 5, 34, 378	ERDS2TJ474
R 6	ERDS2TJ471
R 10, 11	ERDS2TJ562T
R 12, 33, 379, 406, 407	ERDS2TJ102
R 13, 149, 249	ERDS2TJ821T
R 14, 15	ERDS2TJ222
R 16, 19, 20, 148, 152, 248, 252	ERDS2TJ682T
R 17	ERDS2TJ822
R 30	ERDS2TJ100
R 32 (G)	ERDS2TJ392T
R 101, 129, 201, 229	ERDS2TJ473T
R 102, 202, 332, 342, 383, 384, 425, 429	ERDS2TJ152T
R 103, 131, 133, 203, 231, 233, 305, 312, 314, 322, 323, 326, 328, 329, 331, 335, 338, 342, 358, 363, 390, 417, 423	ERDS2TJ472
R 104, 107, 143, 204, 207, 243, 352, 364	ERDS2TJ470T
R 105, 108, 205, 208	ERDS2TJ823
R 106, 109, 206, 209, 426	ERDS2TJ392T
R 110, 111, 210, 211, 318, 418	ERDS2TJ222
R 112, 117, 128, 140, 212, 217, 228, 240, 430	ERDS2TJ332
R 113, 115, 213, 215	ERDS2TJ182
R 114, 214, 336, 337	ERDS2TJ682
R 116, 216 (Z) (E) (I) (G) (XC)	ERDS2TJ472
R 116, 216 (F)	ERDS2TJ103T
R 118, 218	ERDS2TJ153T
R 119, 219, 301, 306, 341, 345, 346, 347, 348, 353, 356, 359, 385, 386, 427	ERDS2TJ103
R 120, 220 (Z) (E) (I) (G) (XC)	ERDS2TJ822
R 120, 220 (F)	ERDS2TJ392T
R 121, 135, 221, 235, 308, 315, 375, 376	ERDS2TJ105
R 122, 222, 316, 366	ERDS2TJ331
R 123, 223, 330, 420	ERDS2TJ272T
R 124, 224	ERDS2TJ683
R 125, 225	ERDS2TJ274
R 126, 226	ERDS2TJ681
R 127, 227, 339, 340, 392, 424	ERDS2TJ122T
R 130, 230	ERDS2TJ680T
R 132, 232	ERDS2TJ822
R 134, 234, 302, 343, 344	ERDS2TJ821T
R 136, 236, 309, 319, 334, 350, 351, 355, 367, 370, 393	ERDS2TJ102
R 137, 139, 237, 239, 362, 421	ERDS2TJ333
R 138, 238, 317, 349, 357, 360, 361, 422	ERDS2TJ104T
R 141, 241	ERDS2TJ182
R 142, 242	ERDS2TJ472
R 144, 145, 244, 245, 313	ERDS2TJ1R0
R 147, 151, 247, 251	ERDS2TJ331
R 153, 253, 307, 310, 320, 333, 365	ERDS2TJ221
R 154, 254	ERDS2TJ331
R 155, 255	ERDS2TJ393
R 303, 321, 325, 369	ERDS2TJ471
R 368	ERDS2TJ221
R 371, 372, 373, 374	ERDS2TJ223
R 377	ERD25VJ106T
R 380	ERDS2TJ220T
R 381, 382, 388, 389, 394, 395, 396, 398, 399, 401	ERDS2TJ103T
R 403, 404, 405, 409, 410, 412, 413, 414, 415, 416	ERDS2TJ121T
R 411	ERDS2TJ153T
R 428	ERDS2TJ101T
R 450	ERDS2TJ100T
R 451	ERDS2TJ390T

CABINET PARTS LOCATION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3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
K12, 56, 57
CP16
K6, 18, 33
K7, 33, 34
K8, 55, 57
CP17
K8, 55, 57
K9, 35, 57
CP8
CP50
K8,55,57
CP12
CP51
K8, 55, 57
CP11
K11, 32, 33
CP13
CP7
CP6
CP5
K12, 56, 57
K9, 35, 57
K8, 55, 57
CP18
CP14
CP19
K58
K5, 10, 57
K39-1
K39-2
K39-3
K39-4
K59
K103
K89
K39-5
K39-2
K39-4
K39-1
K39-3
K43
M89
K39-7
K39
K15
K94
(Power Trans)
K13
K39-6
K23
K26
(Battery)
K106
K20
K101
K29
(Tuner
Circuit)
K60
K26 (Battery)
K67
K16
K44
K70
K68
K52
K69
K13 (F3)
(Jack)
(F1)
K101
K28
(F2)
K40
K49
K72
K101
K13
(Power Supply)
K89
K100
K60
K16
K60
K45
K3 (Right)
K37 (Left)
K95
K27
(Mechanism)
K101
K74
K66
K42
K16
K46
K88
K85
K71
K80
K101
K48
K54
K79
K42
K41
(G. EQ Circuit)
K1 (Right)
K36 (Left)
K88
K2
K78
K77
K92
K101
K14
K101
K101
K13 (Switch)
K86
K50
K47
K87
K82
K73
K93
K84
K53
K62
K76
K65
K87
K4-1
K75
K51
K63
K81
K64
K4 (Right)
K38 (Left)
K19, 25
K17, 21
CP1
K22
TP3
CP3
K24, 31, 57
CP2

Notes:

1. The letter in round brackets in the Ref. No. column indicates the shipping destination.
   (Z).........For all European areas except (E)(F)(I)(G).
   (E).........For United Kingdom.
   (F).........For France.
   (I).........For Italy and Finland.
   (G).........For F.R. Germany.
   (XC)......For Saudi Arabia.
2. The letter in the circle after the part name indicates the color of the part.
   Ⓚ... Black, Ⓢ... Silver, Ⓗ... Gray, Ⓡ... Red

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

CABINET PARTS

Ref. No.	Part No.	Part Name & Description
K 1	**RKF862ZA**	Speaker Box (R) Ⓚ
K 2	**RKE512Z**	Holder, Speaker Cord Ⓚ
K 3	**RGE76X**	Stopper (R) Ⓚ
K 4	**RYM2XCW200LZ**	Speaker Grill Ass'y (R) Ⓚ
K 4-1	**RWEXCW200LZ**	Tweeter Ass'y
K 5	**RJS4L3Z**	Socket (4 Pin)
K 6	**RJP10G18Z**	Plug (10 Pin)
K 7	**RJP12G18ZA**	Plug (12 Pin)
K 8	**RJP2G4Y**	Plug (2 Pin)
K 9	**RJP3G4Y**	Plug (3 Pin)
K 10	**RJP4G4Y**	Plug (4 Pin)
K 11	**RJP5G18Z**	Plug (5 Pin)
K 12	**RJP5G4Y**	Plug (5 Pin)
K 13 (Z) (E) (F) (XC)	**RUP2183ZAN-1**	P.C.B (Jack, Switch, Power Supply) ⚠
K 13 (G) (I)	**RUP2183YAN**	P.C.B (Jack, Switch, Power Supply) ⚠
K 14	**RMP257ZAR-0**	Holder (FWD, REV IND. LED)
K 15	**RMY225ZA**	Heat Sink
K 16	**XTV3+8F**	Screw (Heat Sink, Chassis M'tg)
K 17	**2JSACW200ZA1**	Socket (11 Pin)
K 18	**RJS10L4ZA-X**	Socket (10 Pin)
K 19	**2JSACW200ZA2**	Socket (9 Pin)
K 20	**RJC511Z**	Terminal, Battery (−)
K 21	**RJP11G18Z**	Plug (11 Pin)
K 22	**RJP3G18Z**	Plug (3 Pin)
K 23	**RMC1109ZA**	Shield Plate
K 24	**RJP6G4Y**	Plug (6 Pin)
K 25	**RJP9G20Z**	Plug (9 Pin)
K 26 (Z) (E) (F) (XC)	**RUP2184YAN**	P.C.B (Battery)
K 26 (G) (I)	**RUP2184XAN**	P.C.B (Battery)
K 27	**RMP258ZBR**	Holder (Spectrum Analyzer IND.)
K 28	**RDG5712ZBR**	Drum, Dial
K 29	**XYN26+C6**	Screw (Dial Drum M'tg)
K 31	**RJS6L3Z**	Socket (6 Pin)
K 32	**RJS5L4Z**	Socket (5 Pin)
K 33	**RJT708Z**	Terminal, Socket
K 34	**RJS12L4Z**	Socket (12 Pin)
K 35	**RJS3L3Z**	Socket (3 Pin)
K 36	**RKF862YA**	Speaker Box (L) Ⓚ
K 37	**RGE76Y**	Stopper (L) Ⓚ
K 38	**RYM3XCW200LZ**	Speaker Grill Ass'y (L) Ⓚ
K 39 (Z) (F)	**RYFXCW200LZ**	Rear Cabinet Ass'y Ⓚ
K 39 (E)	**RYFXCW200LZE**	Rear Cabinet Ass'y Ⓚ ⚠
K 39 (I) (G)	**RYFXCW200LZG**	Rear Cabinet Ass'y Ⓚ
K 39 (XC)	**RYFXCW200LXC**	Rear Cabinet Ass'y Ⓚ
K 39-1	**RHK22YA**	Screw (Handle Arm M'tg)
K 39-2	**RKX367Z**	Arm, Handle Ⓢ
K 39-3	**RNW351Z**	Washer (Handle Arm)
K 39-4	**XTC3+10CFY**	Screw (Handle M'tg)
K 39-5	**RKX368Z**	Handle Ⓚ
K 39-6	**RJC931Z**	Terminal Battery (+/−)
K 39-7 (Z) (F)	**RGT1252YA**	Name Plate
K 39-7 (E)	**RGT1252XA-0**	Name Plate
K 39-7 (I) (G)	**RGT1252VA-0**	Name Plate
K 39-7 (XC)	**RGT1252UA-0**	Name Plate
K 40	**RSE216ZA**	Counter
K 41	**RHR1334Z**	Holder, Volume Knob
K 42	**RHR3106ZAR**	Holder, One Touch Editing Angle
K 43	**RKK273Z**	Battery Compartment Ⓚ
K 44	**RBC1009ZA-0**	Button, Direction Ⓗ
K 45	**RBC1010Z**	Button, Band Ⓢ
K 46	**RBC1011Z**	Button, Function, Equalizer Mode Ⓢ
K 47	**RBC1012Z**	Button, Relay Play, Dolby NR Ⓢ
K 48	**RBC1013Z**	Button, FM Mode/B.P Ⓢ
K 49	**RBC1014ZA-0**	Button, Power Ⓢ
K 50	**RBD248Y**	Knob, Graphic Equalizer
K 51	**RBD425Z**	Knob, Volume Ⓢ
K 52	**RBD427ZA-0**	Knob, Reverse Mode Ⓢ
K 53	**RBD442ZA-0**	Knob, Mixing Level, Balance Ⓗ
K 54	**RBT287ZA-0**	Knob, Fine Tuning
K 55	**RJS2L3Z**	Socket (2 Pin)
K 56	**RJS5L3Z**	Socket (5 Pin)
K 57	**RJT707Z**	Terminal, Socket
K 58	**RJT514Z**	Terminal, Earth
K 59	**XEARR225EAY**	Telescopic Antenna
K 60	**RJF28Z**	Holder, Fuse ⚠
K 62	**RDG5782Z**	Gear, Dumper
K 63	**RYQ1XCW200LZ**	Cassette Compartment Ass'y TAPE $\boxed{1}$ Ⓚ
K 64	**RYQ2XCW200LZ**	Cassette Compartment Ass'y, TAPE $\boxed{2}$ Ⓚ
K 65	**RUQ51ZA**	Spring, One Touch Editing Button
K 66	**RJM164Z**	Condenser Microphone
K 67	**RUA734ZAR**	Chassis
K 68	**RUB456ZAR**	Lever, Reverse Mode Slide
K 69	**RUB457ZAR**	Lever, Reverse Mode
K 70	**RUB458ZAR**	Lever, Direction Mode
K 71	**RUL867ZB**	Angle, One Touch Editing
K 72	**RUL868Z**	Angle, Counter
K 73	**RUS664Y**	Spring, Cassette Compartment
K 74	**RHG728Z**	Rubber, Microphone
K 75	**RBC1043ZA-0**	Button, One Touch Editing Ⓡ
K 76	**RBD426ZA-0**	Knob, Tape Selector (TAPE $\boxed{2}$), Editing Mode Ⓗ
K 77	**RBT282ZA**	Knob, Tuning Ⓗ
K 78	**RDE165ZA**	Rack, Dial Pointer
K 79	**RDP255ZAR**	Pointer, Dial
K 80 (Z) (F)	**RYM1XCW200LZ**	Front Cabinet Ass'y Ⓚ
K 80 (E)	**RYM1XCW200LE**	Front Cabinet Ass'y Ⓚ ⚠
K 80 (I) (G)	**RYM1XCW200LG**	Front Cabinet Ass'y Ⓚ
K 80 (XC)	**RYM1XCW200LC**	Front Cabinet Ass'y Ⓚ
K 81	**EAS12SL05A**	Speaker (Woofer)
K 82	**RAS5PH08ZA-D**	Speaker (Squawker)
K 84	**RJE123Y**	Speaker Cord
K 85	**RUL661Z**	Speaker Wall Mounts
K 86	**RUL869ZA**	Angle, Speaker Box
K 87	**XTV3+10G**	Screw (Speaker M'tg)
K 88	**XTV3+12GFY**	Screw (Speaker Wall Mounts, Speaker Cord Holder M'tg)
K 89	**XTV3+50G**	Screw (Cabinet, Speaker Box M'tg)
K 92	**RHG3011Z**	Bushing, Speaker Cord
K 93	**RBD426YA**	Knob, Tape Selector (TAPE $\boxed{1}$) Ⓗ
K 94	**RMC1088Z**	Shield Plate
K 95	**RGK1294Z**	Ornament
K 100	**QDB0288**	Belt, Counter
K 101	**XTV3+12G**	Screw (Mechanism, P.C.B, etc. M'tg)
K 103	**XYN3+F12FY**	Screw (Telescopic Antenna M'tg)
K 106	**RKT1070Z**	Terminal, Antenna

ACCESSORIES

Ref. No.	Part No.	Part Name & Description
A 1 (Z) (F) (I) (G)	**RJA20Z**	Power Cord, AC ⚠
A 1 (E)	**RJA86Z**	Power Cord, AC ⚠
A 1 (XC)	**RJA103Z**	Power Cord, AC ⚠
A 4 (Z) (E) (F) (I) (G)	**RQX4920ZA**	Operating Instructions
A 4 (XC)	**RQX4931ZA**	Operating Instructions
A 5 (XC)	**RJP120ZS**	Plug Adaptor ⚠
A 6 (XC)	**RJN48Z**	Cassette Tape

PACKINGS

Ref. No.	Part No.	Part Name & Description
P 1	**RHP546ZA**	Poly Cover (Speaker)
P 2	**RPH545ZA**	Poly Cover
P 3	**RPN9540Z**	Pad
P 4	**RPK2420ZA**	Gift Box
P 5	**RPN5145ZA**	Sheet

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